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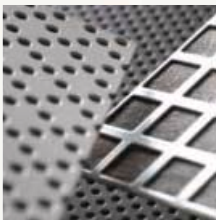
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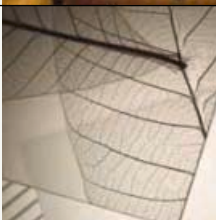
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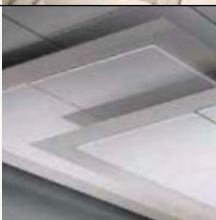
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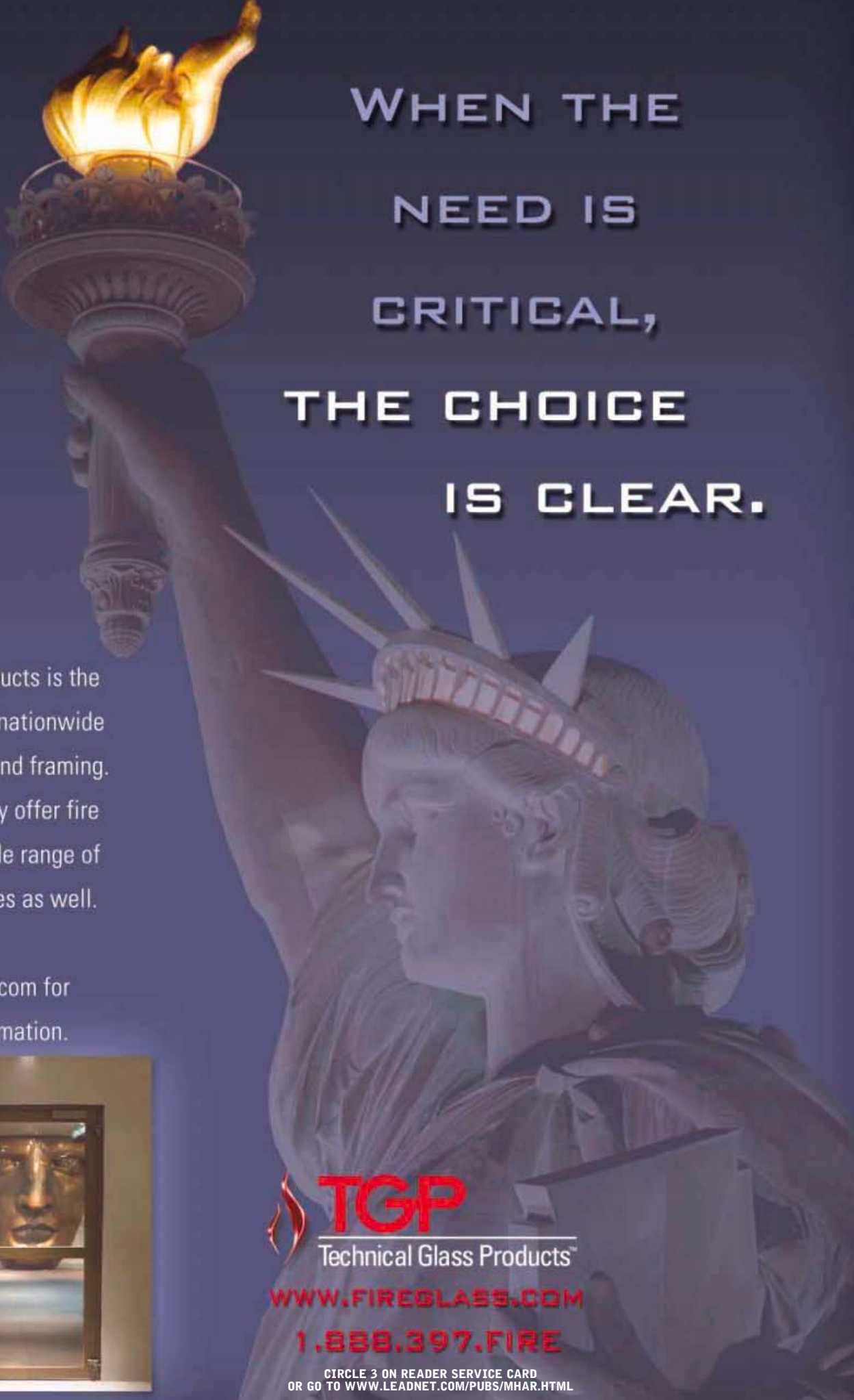
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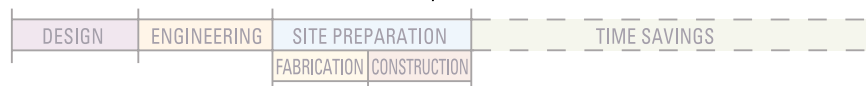
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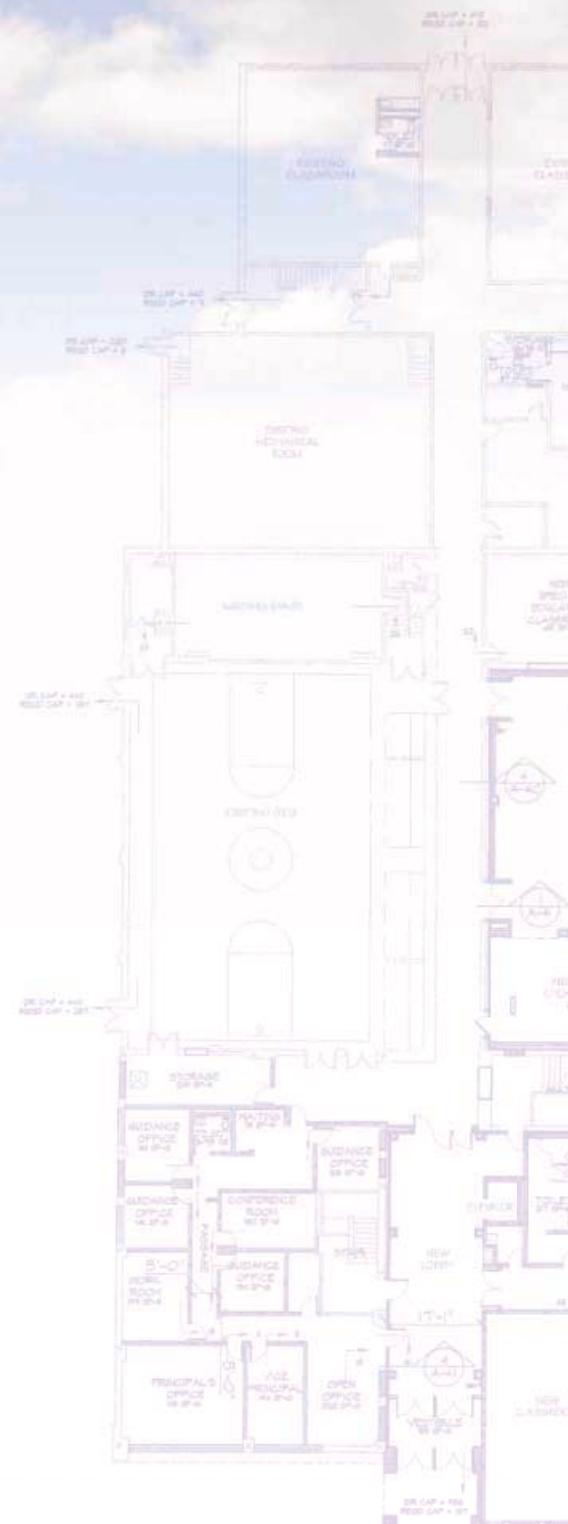


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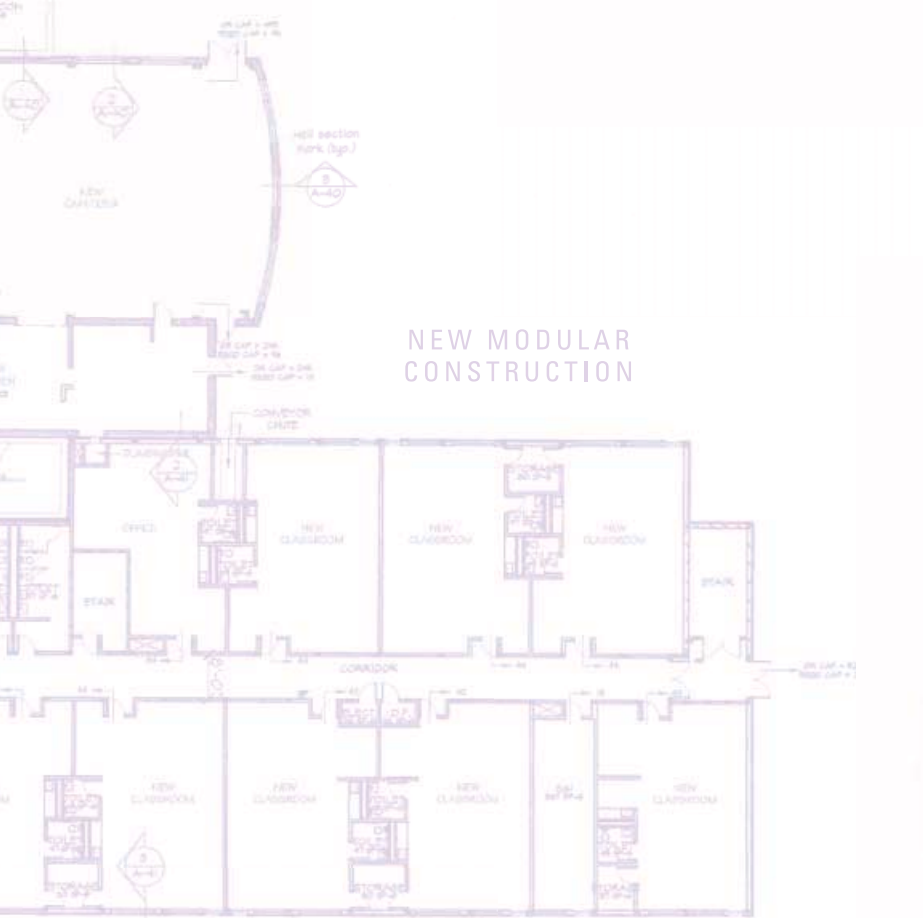
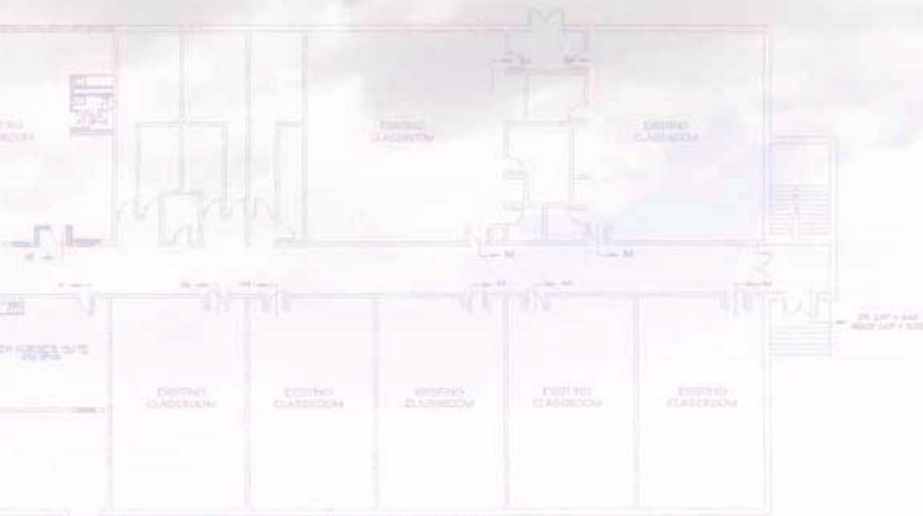


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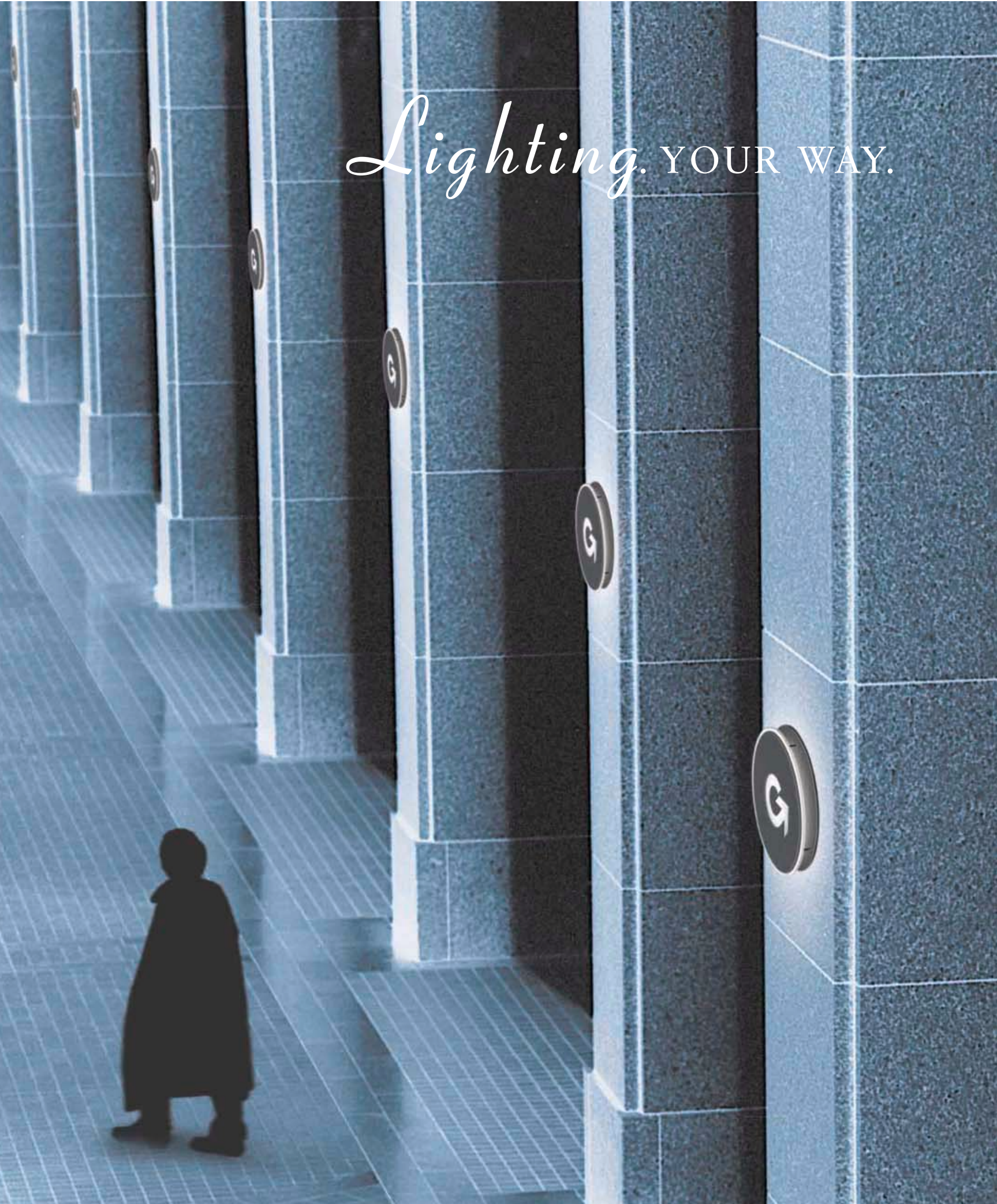


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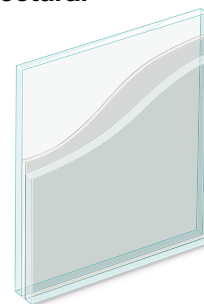


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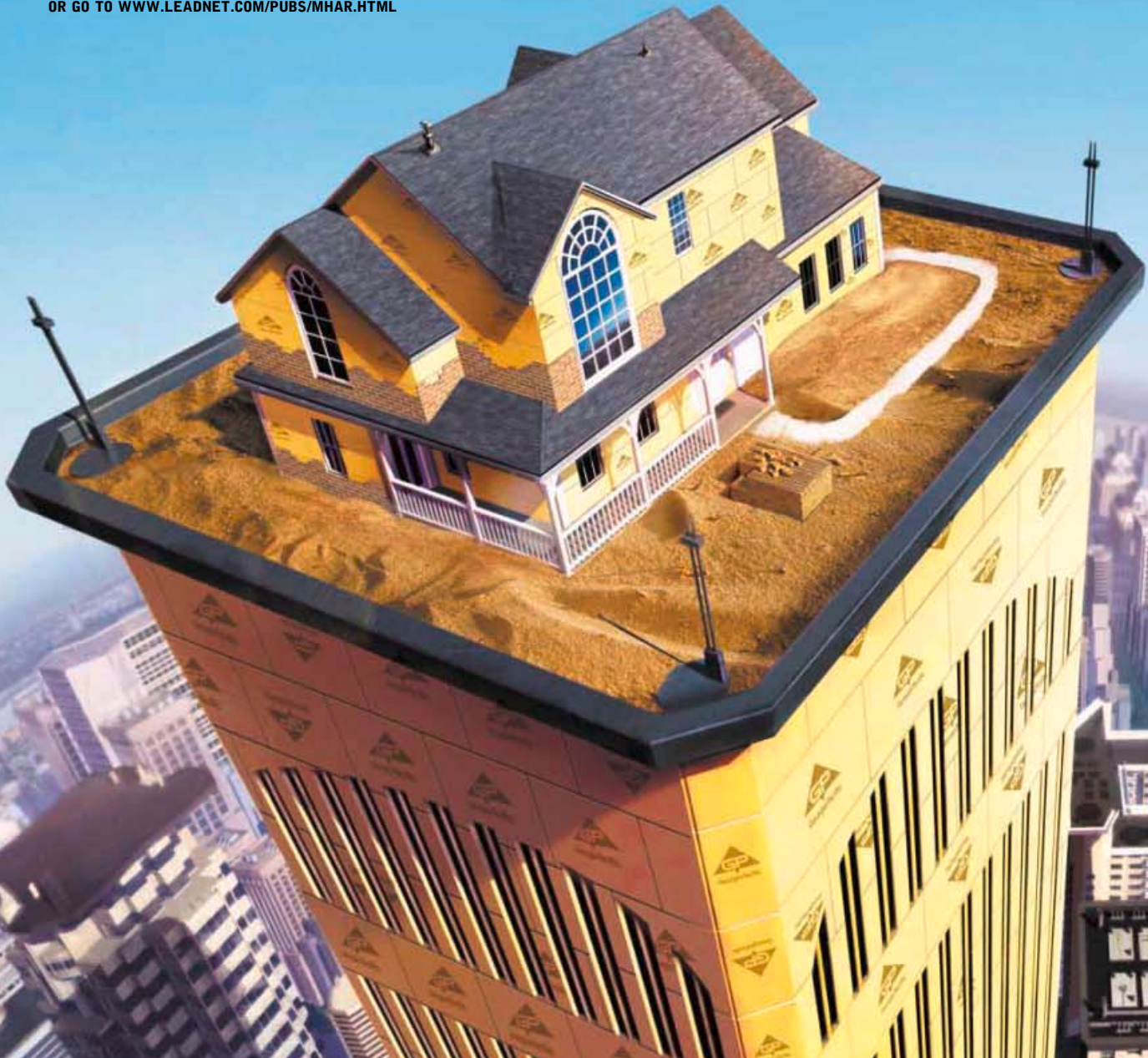


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On the Cover: Sambo teaching kids around the kitchen table at Spencer House, where he lived and worked, Newbern, Ala., 2000. Photograph by Timothy Hursley
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You can find these stories at www.architecturalrecord.com, along with expanded coverage of Projects, Building Type Studies, and Web-only special features.

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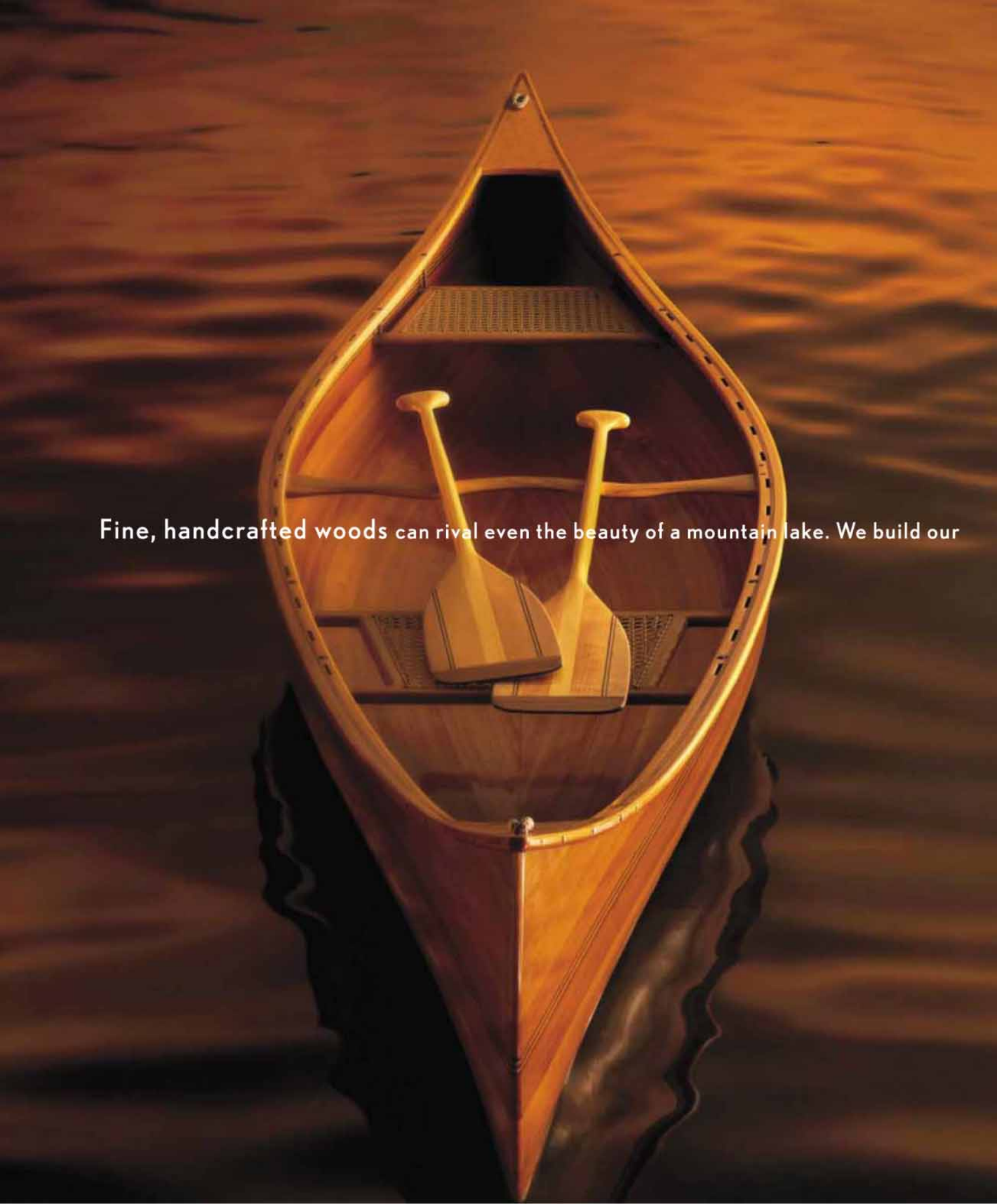
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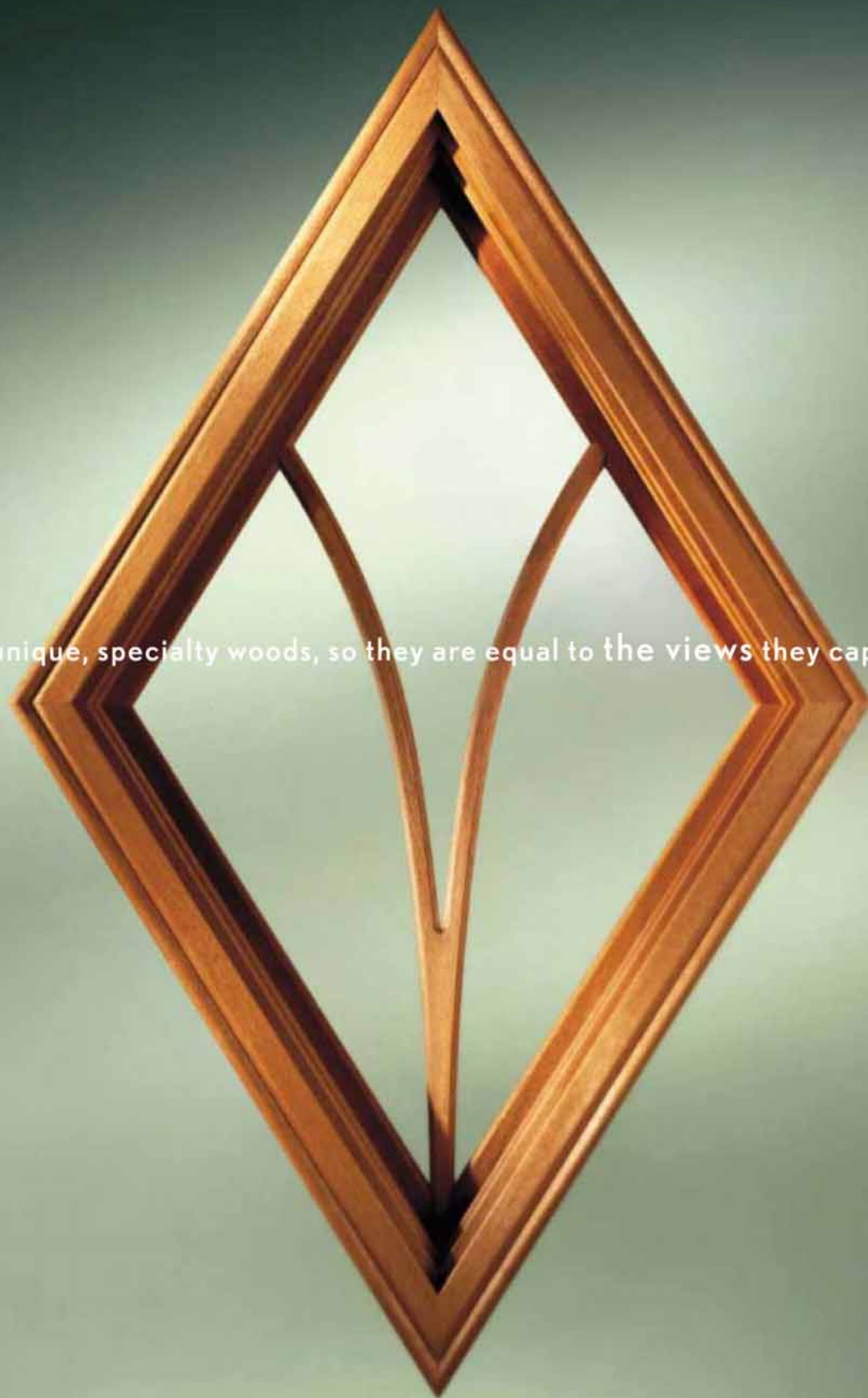
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A high-angle, symmetrical photograph of a wooden canoe floating on a body of water. The canoe is made of light-colored wood and has two wooden paddles resting inside. The water is dark and reflects the canoe. The lighting is warm, suggesting a sunset or sunrise. The text "Fine, handcrafted woods can rival even the beauty of a mountain lake. We build our" is overlaid on the image.

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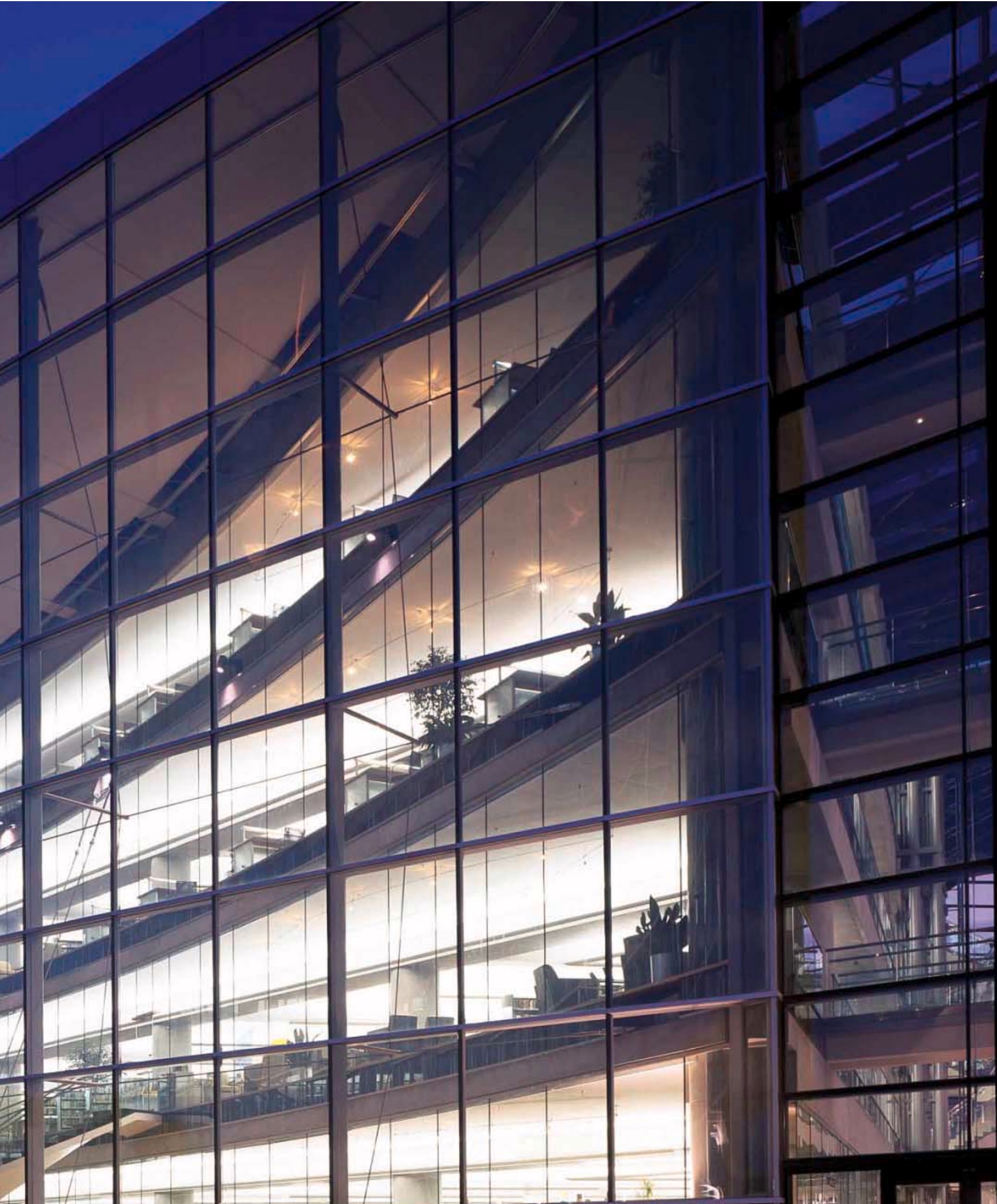
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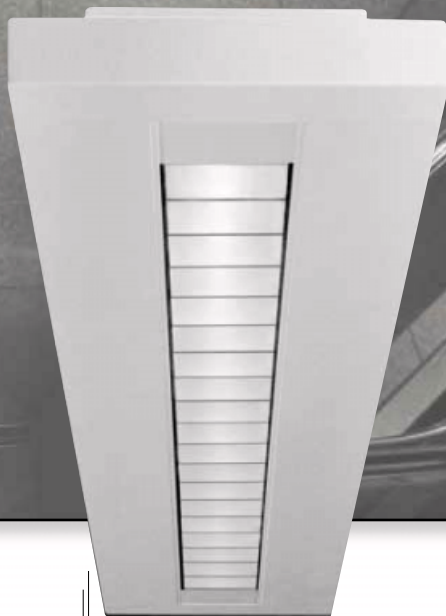
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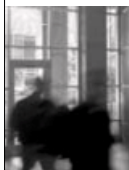
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Editorial

By Robert Ivy, FAIA

The World War II Memorial, recently unveiled on the Mall in Washington, D.C., embodies the term “neo”—Neoclassic, neo-Modern, even neo-Postmodern—and inhabits a nether region in the landscape between the Washington Monument and the Lincoln Memorial. While its axial placement and the prominence of its subject called for greatness, unfortunately the nation has received a compromised memorial muddled in its architectural language and tamely settled into the site.

The site is pleasant enough. On a sunny May day, tourists had already found the Kodak moments in all the cardinal directions, including a stunning view out toward the Lincoln Memorial beside a cascading waterfall. The fountains splashed on cue; taxicabs disgorged newcomers and a few veterans, who pointed out the states on the 56 pylons anchoring each end of the display. The crowds smiled at architect Friedrich St. Florian’s design.

It could have been more. This memorial deserves our scrutiny because it commemorates the 20th century’s great moral battle for the future of civilization—a conflict that mobilized worldwide resources toward a common end and cost millions of lives. After the human sacrifice, and the lands despoiled, such events call for majestic resolution. Instead, rather than represent confrontation, the World War II memorial resorts to large-scaled, neat symmetries, tying up opposing forces into a bow and leaving future generations with no clues to actual events. What a lost opportunity.

The fault partially lies in confusion of historic precedent and the principles that underlie historic expression. It’s not about employing Classicism: Builders in Washington have reinterpreted classicism for more than 200 years, adapting canonical dictates to era and need. Having chosen a mode, in this case the ensemble cries for a clear voice—of Baroque genius, for example. In Bernini’s hands, human engagement and triumph might have been rendered by godlike, overscaled forms rising from the water, or horses thundering through the spray, all movement, light, action, and poetry.

Instead, the memorial lacks authoritative identity. The twin locii of

war have been reduced to opposing pavilions representing the Atlantic and Pacific theaters, which merely bookend the public space. Lining the pond, the surrounding pylons seem likewise devoid of meaning or emotional resonance, merely listing in a prosaic way the states and territories involved.

Architectural language appears to be complicit in this vacuous amalgam. The pavilions have been reduced to simple masses, reminiscent of Neoclassical Modernism from the 1930s, devoid of architectural ornament save naming. The truncated stone pylons have been cut to accept metal wreaths that hang from each column. Interwoven between them, a bronze rope by the artist Ray Kaskey provides ornamental respite from the severity, finding odd resolution in huge metal sculptures uncomfortably housed in the twin pavilions at each end. Four eagles in each pavilion hold a wreath, oppressed by a roof hovering too close overhead. Rather than triumphant, these Postmodern national raptors appear caged and cowed.

Although ARCHITECTURAL RECORD criticized the original plans for the World War II Memorial, the finished project arrives at a moment poignant with international significance. We reassert that powerful design can affect the human psyche, reflect our values, and lift us to remembrance and reflection. Certainly the Washington Monument, in its sheer scale and unapologetic geometry, anchors the entire capital. The Lincoln Memorial, through figurative sculpture and actual words, evokes nobility of spirit; the Vietnam Memorial, pain through absence and abstraction. We should have asked for heroism from the most significant physical artifact poised between them, the last great monument to be placed on our own great lawn. Not a neo-memorial.

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Letters

Thinking globally

In a profession whose environmental works range from the pyramids to the Uffizi Gallery to the Hong Kong Shanghai Bank to the Cincinnati Center for Contemporary Art to the Disney Performing Arts Center ... and to a country, ours, the United States of America, that is inclusive to all, of course we have a focal issue on Chinese Architecture [RECORD, March 2004], and of course Zaha Hadid is recognized for architectural achievement.

When I am putting together that next wall section or listening to the needs of the client, it helps to know from the micro to the macro level that our profession in America does extend itself beyond its walls.

I find inspiration in a profession where every week, I see, think, or hear something architecturally related that moves or inspires me.

—Nancy A. Harper
Albuquerque, N.M.

Extended Architecture

I read with great interest Robert Campbell's critique "Okay, architects, lighten up—but don't lose your ideals in the process" [Critique, May 2004, page 67], in particular the point that architectural development has been characterized by mutually exclusive shifting foci. This is certainly true.

What we need is an architectural concept that addresses the totality that comprises the architectural problem and that unifies two poles—on one side the architect's personal capacity for insight, investigation, and imagination, and on the other the cultural reality of the site comprising its unique historicist, humanistic, and ecological characteristics. This concept defines an "Extended Architecture"—an architecture that takes its initial formal cues from the unique or particular historical, humanistic, and ecological characteristics of the project area as a whole. That applies both to the neighboring context in the case of a new building and to the existing building as the context for an interior/exterior renovation and/or rehabilitation. While taking its cue from the cultural reality of the site, Extended Architecture goes beyond simple contextualism and its inductive derivation of form from consideration of the constraints of local context resulting, at best, in a narrative architecture of good fit and perceptual continuity. Extended Architecture, on the other hand, juxtaposes the architect's personal (this is where the "playfulness" can come in!) reinterpretive capacity of underlying principles as deductive idea

adding a universal or abstract dimension to architecture that supercedes the immediate environment—it is a poetic dimension that evokes meanings that are both related to the unique context from which they originate and are universal in that they touch on meanings and memories that are shared by other places. Extended Architecture is thereby a "lens" dialectically related to its context—an architecture that is both poetic and narrative—that is historically sensitive, ecologically sound, and reflects the special and unique character of the place and the people that it serves.

—Val Zarro, AIA
Pittsburgh, Pa.

Bringing down the house

I was both impressed and disturbed by the "feast of houses" offered in the April 2004 Record Houses issue.

On the one hand, I was impressed by the delicious collection of mouth-watering images. The stunning panoramas of ocean, desert, and sylvan landscapes were very appealing—dare I say "sexy." Upon closer examination, however, I wonder if this plate was served up empty. Do the seductive images obscure a troubling and continuing trend in the architectural press: promoting image over substance? I also wondered if the photogenic sites made these projects that much more publishable, and if creating beautiful architecture in a "high-end enclave ... along a precipitously steep sandy cliff cradling a secluded beach" isn't a bit facile.

I was disturbed by this focus on "high-end enclaves" in exotic locations. Of the nine offerings in the 2004 Record Houses, only one was displayed in an urban context, and only one integrated energy-efficiency into its design. The program was typically a "vacation" house (i.e., not a primary residence), typically in a semiremote locale, on several acres of land. The houses average over 3,000 square feet, accommodate an average of seven occupants, for an average of nearly 500 square feet per person. In lieu of the excesses of the 2004 Record Houses, it is ironic that one of the houses is praised "in its unadorned simplicity ... in counterpoint to ... multi-gabled McMansions." I suspect that in the final analysis, few McMansions use as many resources to construct or maintain as do many of the 2004 Record Houses. My suspicion is that the bourgeois, late-20th-century architectural ideal of the private house in the country needs to be reevaluated. It goes without saying that I am left with an unpleas-

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Letters

ant taste in my mouth.

How can we serve a more palatable dish that is both tasty and visually appealing? Is it possible for architects to create innovative design solutions that are both socially responsible and environmentally sustainable? Now is the time for our profession to reevaluate our responsibility to educate ourselves, and our clients, and to promote truly integrated, sustainable architecture. By this I mean more than paying lip service to "green" architecture, and LEED certified architecture. As a profession, we should critique whether each and every project we do is sustainable. As shepherds of the built environment, we need to develop sustainable practice through legislation, activism, and our actions. I challenge ARCHITECTURAL RECORD to lead the way by publishing more works that are truly innovative, socially responsible, and environmentally sustainable. Then we will truly

feast on a banquet of architectural delights.

—Kent Hikida, AIA
Via e-mail

Chicago on my mind

Just wanted to let you know how much I enjoyed reading last month's [May 2004] issue. I appreciate the way in which the articles were arranged to enliven the debate the issues raised; at least it appeared to be purposeful.

I cannot help but comment on the Soldier Field [Projects, page 114] and IIT [Projects, page 122] articles. First, I think that Mr. Giovannini does an excellent job of positing the issue, that is, Classical vs. Modern ideals vis-à-vis public space. The fact that the debate in this case is over a major sporting venue makes it even meatier. The contrast of Mr. Tigerman's opinion just adds flavor. I have to admit that my first take on

his "collage" was that it was a commentary on professional sports. Although I think that his views, strangely enough, sound like those of a past era, it does reflect the opinion of the average citizen shackled with the visual and financial weight of these massive projects. His comments regarding irony in this context brought to mind some of the sexualized floor plans by Robert A.M. Stern that I was introduced to in college.

Also, as it relates to the IIT projects, I could not help but think about the criticism of "American arrogance" that we are constantly barraged with from Europeans. Placing Rem Koolhaas next to Murphy/Jahn was terrific. Here we have the intellectually cool European shamelessly wagging his artistic arrogance around on American soil. Is it me, or does it appear that this project is a cross between a night club and a 1970s-era bowling alley?

—Chris McCray
Associate Architect
Fitzpatrick.Butler Architects
Tyler, Tex.

Cities making their mark

I really enjoy it when RECORD focuses on a particular U.S. city in a single issue, such as May's Chicago issue, or last year's November issue about Los Angeles. This seems like a new tactic for the magazine, and I'm hoping that when you've covered all the biggies, you'll move to some of the smaller U.S. cities that are making their marks with good solid design and innovative solutions to housing, transportation, and sprawl. Hopefully, once you've covered San Francisco, New York, Dallas, and others, you'll move on to Portland, Seattle, and my favorite, San Diego.

—Rayne Adley
San Diego

Fans across the water

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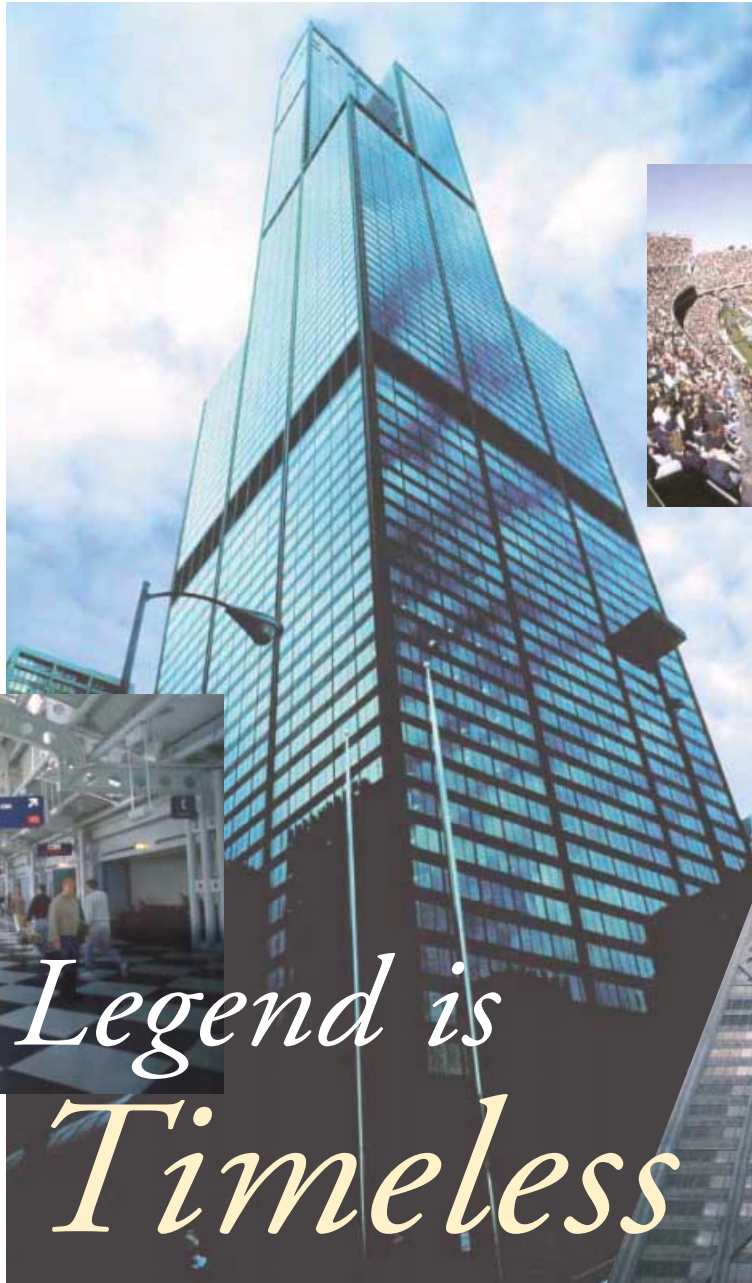
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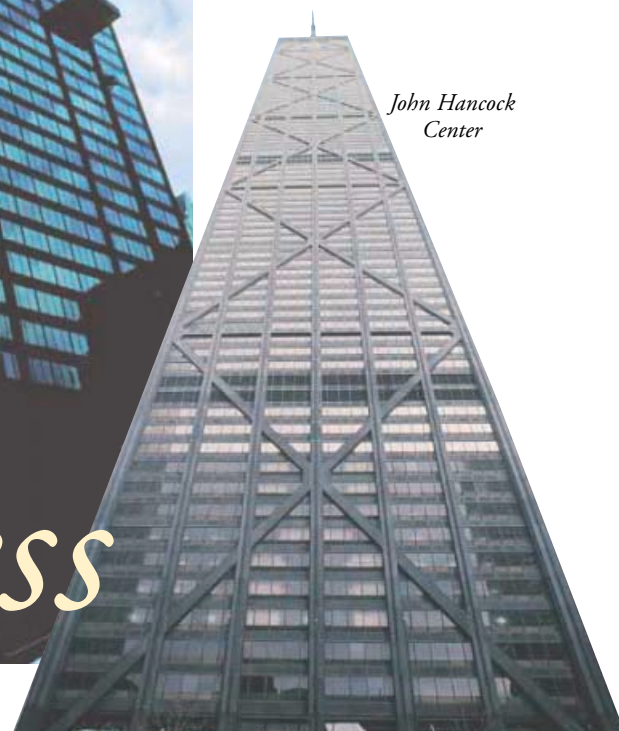


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Letters

ecture, RECORD helps me explore the latest designs of famous architects such Steven Holl, Tadao Ando, Zaha Hadid, and others.

I accidentally discovered back issues of the magazine at the library, which I have also found fascinating.

I will become a faculty member of Thammasat University's school of architecture in Thailand, the most prestigious and innovative school of architecture in Thailand. The magazine is very valuable to me, but with shipping, the subscription cost is very high. I wonder if there is a way for me to get the magazine without paying such high costs?

—Non Arkaraprasertkul
Bangkok, Thailand

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version is exactly the same as the print edition, with every page reproduced in the digital format. Visit <http://archrecord.construction.com/digital/> to try the service, and let us know what you think.—The Editors

Corrections

The cover photograph of Soldier Field in the May 2004 issue should have been credited to Doug Fogelson (photo shown at right). Also, the Soldier Field and North Burnham Park Redevelopment project was completed as a joint venture between Lohan Caprile Goettsch Architects, with primary responsibility for the master plan and North Burnham Park project, and Wood & Zapata, with primary responsibility for the architectural design of Soldier Field. Joe Dolinar was the project manager for Lohan Caprile Goettsch on the assignment. A May News item about new designs for Los Angeles animal

shelters [page 36] omitted Rossetti Architects, of Southfield, Michigan. The firm worked on the South Central Los Angeles Animal Shelter. The curator of *Unbuilt Chicago* [Exhibitions, May 2004, page 77] is actually Martha Thorne, associate curator of architecture at the Art Institute of Chicago. Dan Wheeler is the installation designer of the exhibition. To clarify, in the May News section [page 42], the winning team for the new urban park in Milan is Inside Outside (landscape/interior designer—Amsterdam, Netherlands); Mirko Zardini (architect/urban theorist—Milan, Italy); Michael Maltzan Architecture (architect—Los Angeles); Irma Boom (graphic designer—the Netherlands); Piet Oudolf (botanist—Hummelo, the Netherlands); Ro D'or (technical engineer—the Netherlands). In the April Correspondent's File [page 79], the correct credit for the National Ballet School is: Kuwabara Payne McKenna Blumberg Architects,

Goldsmith Borgal and Company, architects in joint venture. Also in April, we'd like to clarify that in the April News article on San Francisco high-rises [page 44], the comments of John Parman, AIA, cochair of *Line*, the online journal of AIA San Francisco, were



his own and do not reflect the opinion of AIA San Francisco, its board of directors, or *Line*.

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Samuel Mockbee, AIA Gold Medal Winner

We celebrate the life and work of the 2004 Gold Medal Winner, Samuel "Sambo" Mockbee (1944–2001). In this very special section, we feature the personal artwork of Sambo as well as projects from the Rural Studio. Also, an audio portion from the National Building Museum's roundtable discussion on Sambo is exclusive to our site.

AIA Honor Awards

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Our AIA Honor Awards coverage goes more in-depth with the recipients of the 2004 AIA Young Architects Award. Learn more about these five architects, the work they design, and their commitment to the profession and to their communities. Also, read about architect Chantal Aquin whose inventiveness contributed to the residents of Los Angeles' Skid Row.

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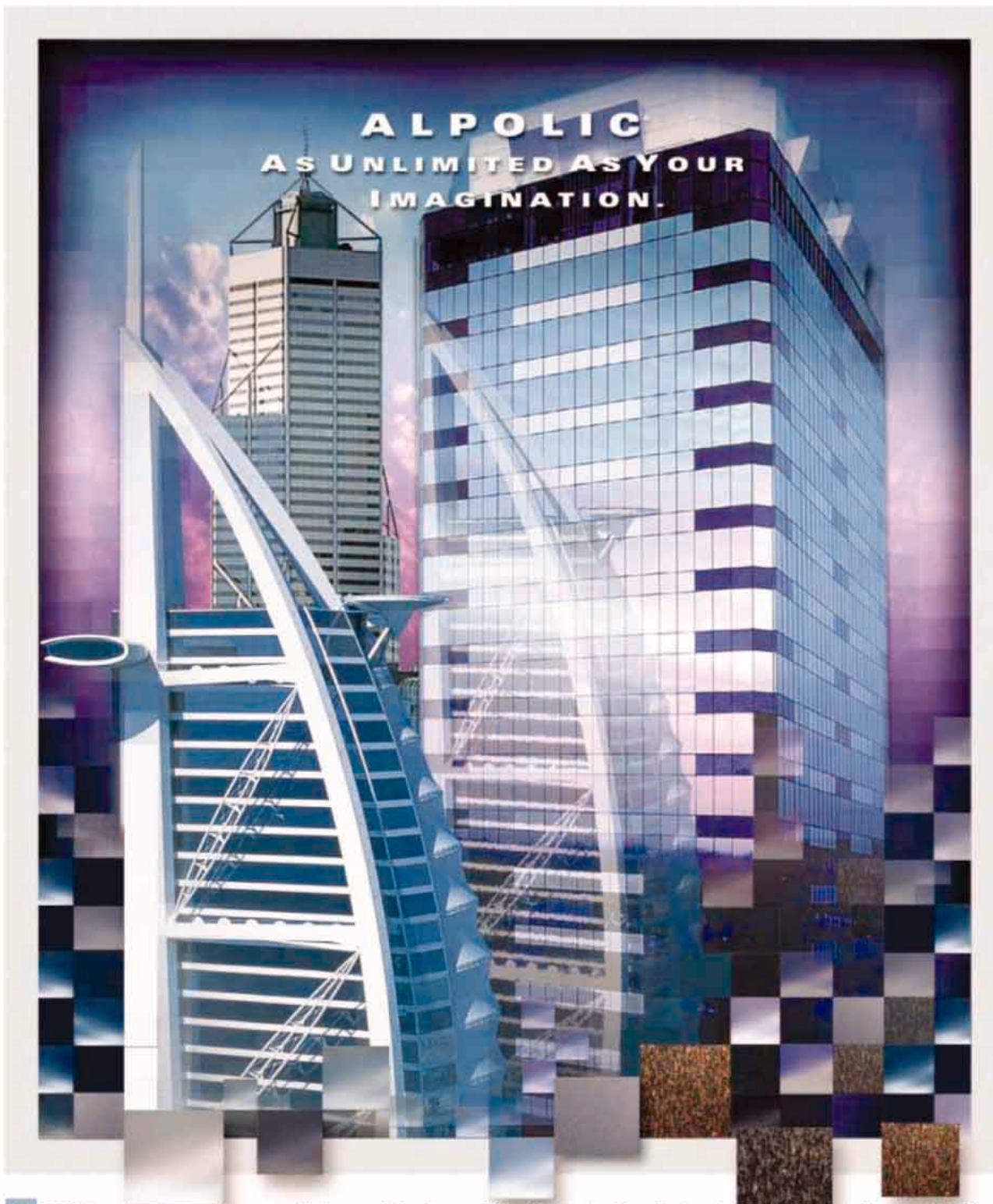


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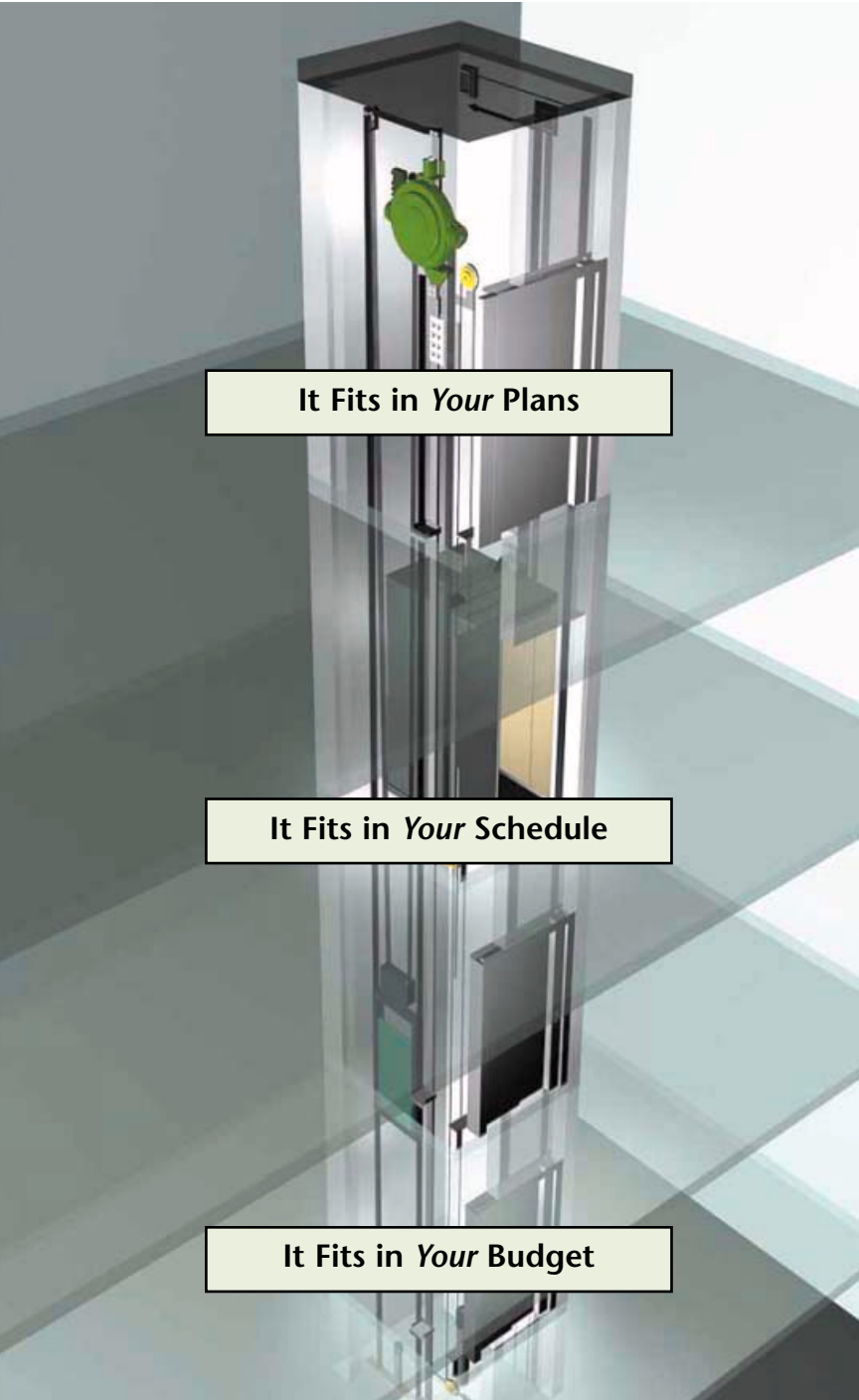
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REBUILDING LOWER MANHATTAN

Silverstein's court loss could put Trade Center plans in jeopardy

Because of his defeat in a May court case over insurance policies for the destroyed Twin Towers, real estate developer Larry Silverstein is facing a multibillion dollar shortfall in the funds that he needs to redevelop the World Trade Center. A federal jury in Manhattan ruled on May 3 that the majority of Silverstein's insurers owed one payout, not two, for the attacks.

Instead of a hoped-for \$7 billion, Silverstein is now looking at compensation of between \$3.5 and \$4.5 billion, which is likely not enough to pay for all of the five office buildings called for in Daniel Libeskind's master plan.

Silverstein maintains that his financial setback in court will not significantly affect development of the site. "What he [Silverstein] will do is what every other real estate developer in the city does and has done for the past 50 years: traditional financing," says Dara McQuillan, a Silverstein spokesperson. "He will use Freedom Tower and the other office building as collateral for loans to build the next ones."

But with a 12.9 percent vacancy rate for class A office space in Lower

Manhattan in April, there is widespread disagreement about Silverstein's ability to raise the estimated \$7 billion that it will cost to build the five office towers. Some speculate that the Libeskind plan



Silverstein leaving court in February.

might have to be modified to include slimmer residential towers, and that Silverstein could even lose control of a part of the World Trade Center site. "I think that [Governor Pataki] is going to be able to ease him out," says Peter Slatin, a Manhattan real

estate analyst. "There is no such thing as a master plan without money," adds Mitchell Moss, director of the Taub Urban Research Center at New York University.

Some argue that scaling back the overall master plan and incorporating more uses, including residential, on the site would help ease Manhattan's housing crunch and address the concerns of those who wanted Ground Zero to have a more 24-hour-a-day atmosphere. "If the demand isn't there for office space, I'd expect that they'd consider a broad mix of uses," says Jeremy Soffin, director of public affairs at the Regional Plan Association.

Some New York City real estate analysts, however, say that Lower Manhattan should easily be able to absorb the 10 million square feet of office space envisioned in the Libeskind master plan even though it may take more than a decade to build all of it. "I don't think even if there was \$7 billion available, that [Silverstein] would be building it now," says Michael Slattery, senior vice presi-

dent for research at the Real Estate Board of New York. "I think that everybody always understood that the pace of development was going to be tied to market demand. Would it have been easier if Larry Silverstein had \$7 billion than \$3.5 billion? Without a doubt, but it still wouldn't have resulted in buildings being built with no tenants."

While there has recently been a relatively large amount of empty office space in Lower Manhattan, the recent uptick in the economy looks promising for Silverstein. The increase in new office space occupied in Lower Manhattan for the first four months of 2004, 701,000 square feet, is on track to equal the increase of 2.9 million square feet for 2000, when the city's economy was booming, according to Robert Sammons, director of research at Colliers ABR, a real estate services firm. "With the economy showing signs of recovery, I think that we will need to be prepared to get these buildings up and running, because in the last boom the reason that we lost a lot of people and businesses to New Jersey is that we couldn't put buildings up fast enough." *Alex Ulam*

WTC Briefs

Freedom Tower ahead of schedule, and Arad becomes a partner On May 5, New York Governor George Pataki announced that the 1,776-foot World Trade Center Freedom Tower would break ground on July 4, two months ahead of schedule. He added that the dismantling of the Deutsche Bank tower, adjacent to the Trade Center site, would begin in the fall and be com-

pleted by 2005.

Meanwhile, in late April, World Trade Center Memorial designer Michael Arad joined New York-based Gary Edward Handel + Associates as a partner. "I felt that this was a group of people that I could work with very well," says Arad, who adds that the company's skills and resources will help him best "serve the memorial." Firm principle Gary Edward Handel firmly maintains that the new partnership will not

change Arad's vision for the memorial. "We have no desire but to help Michael with his vision," says Handel. Handel meanwhile brushed aside suggestions that Arad was too untested to be a firm partner. "I think if you spend time with Michael, he's remarkably talented and mature and has an incredibly clear vision of what he wants to accomplish. We have faith in his ability to perform not just on this project, but on ongoing work with the firm." *Sam Lubell*

A full-page photograph of two male soccer players in action on a green field. The player on the left wears a white and black jersey and black shorts, while the player on the right wears a blue jersey and black shorts. They are both reaching for a soccer ball on the ground. The background is a blurred crowd in a stadium.

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REBUILDING LOWER MANHATTAN

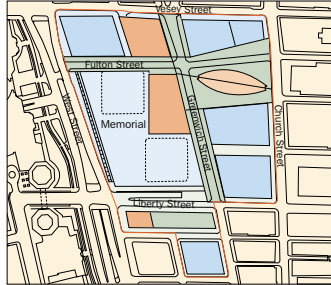
Libeskind's World Trade Center guidelines raise doubts

While perhaps the biggest uncertainty at Ground Zero is whether the new World Trade Center will take shape, other questions loom large. Many revolve around Daniel Libeskind's World Trade Center Commercial Design Guidelines, which were issued in February in a "confidential draft" form and were recently received by RECORD.

The guidelines are 267 pages long and their purpose, as stated, is to "describe the form, character, and standards of development that will support the master plan." They are separated into 10 thematic chapters focusing on areas of development, including "overall site development guidelines" and "public open space guidelines."

But a few members of New York New Visions (NYNV), a group helping establish design principles for Lower Manhattan, have argued that the guidelines are too vague and weakly worded to carry out Libeskind's plans for the Trade Center. Comments Bruce Fowle, FAIA, of Fox & Fowle Architects in New York, and a member of the NYNV executive board, "There are lots of 'shoulds' in there but very few 'shalls,' so there is no real control. There is no obligation to do anything. The most definitive thing was the sloped tops on the towers to follow Libeskind's radial scheme." Jordan Gruzen, FAIA, also with NYNV and with Gruzen Samton Architects in New York, adds that "there's confusion in the guidelines whether anybody has the power to make anything happen." Fowle also maintains that there is little provision for oversight in the plans: "They have yet to establish an administrative process, who is going to watchdog this, and who is going to make the decisions of where variances are going to be allowed," he says.

The guidelines are indeed filled with "shoulds" and "mights," although they also feature many "shalls" and "musts," as well as specifics about, for instance, sidewalk widths



Master plan diagrams look similar: Daniel Libeskind's (left), Cooper Robertson's (below left), and Beyer Blinder Belle's (below) all feature comparable layouts. All faced similar site restrictions.



and the designs of building bases. Libeskind replies, "In the design guidelines, the major elements of the master plan are defined, maintained, and strengthened. Some have called them too loose, while others have called them too rigid. The intention is to strike a fair medium." Other building officials stress that the guidelines are still being developed and are not ready for scrutiny.

Meanwhile, Fowle also charges that Libeskind's designs for the site are starting to look similar to those originally proposed by Beyer Blinder Belle and Cooper Robertson back in summer 2002. Those plans were widely derided for a lack of imagination. All three plans, he points out, include an "assemblage of individualistic towers with a radial spiraling effect." The only difference, he says, is the Freedom Tower. Libeskind again begs to differ: "That's like saying a man and a chicken are the same because 98 percent is the same," he says. "It's that small difference that makes it radically different—the architecture, spirit, culture, space, design, and its meaning. The earlier plan was basically just an abstraction. There are so many subtle differences. How you articulate streets. How you make streets more important than the buildings themselves, and so on." S.L. and A.U.

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Record News

REBUILDING LOWER MANHATTAN

9/11 memorials, not just in Manhattan

As the highly scrutinized designs for the World Trade Center and Pentagon memorials continue to progress, several smaller, more specific 9/11 memorials of interest have also been developing. In at least one case, even construction has begun.

On Staten Island, contractors working for New York City's Economic Development Corporation broke ground for Staten Island's memorial, which its architect, Masayuki Sono, calls "Postcards." Sono has been working to refine the design with another architect, Lapshan Fong, since he won the open competition in June 2003.

"When I started working on the competition," Sono said, "I thought the most important thing was to connect the victims back to us."

That led Sono to develop his design, which is an abstract representation of two curling postcards. Individual Staten Islanders who died on September 11 will each have individual profiles on

"commemorative stamps."

North of New York City, Frederic Schwartz won a competition to design a memorial for Westchester County. Schwartz's design incorporates 109 steel rods, one for each Westchester victim, that swoop up from the ground to form a single spire.

Schwartz is also a finalist in a competition to design a memorial for a pier on the Hoboken, New Jersey, waterfront. His entry, designed in collaboration with landscape architect Brian Tolle, would put a framed ramp on the pier.

"The frame doubles as a lens through which to observe [the World Trade Center site] and reflect," Schwartz said at a public presentation at Hoboken City Hall in late April.

The FLOW group, comprising architect Jeanne Gang, artist Janet Echelman, and others, proposes an artificial island in the Hudson River, with a kinetic sculpture on top of 75-foot fiberglass columns.

Architect Ralph Lerner and landscape architect Kate Orff propose a series of 53 lights (one for each Hoboken victim) on top of 60-foot copper poles, along the south side of the pier. A path along the edge of the pier would lead to what Lerner described as an "ear of personal contemplation that focuses the sound of the river and orients viewers back to the World Trade Center site." The fourth Hoboken finalist team of Krzysztof Wodiczko and Julian Bonder showed a commemorative path along the pier. Wodiczko cited his Polish ancestry as part of the background of his and Bonder's design. "In Poland," Wodiczko said, "we say that somewhere between the memorials, there is Poland."

Two sculptors are also adding memorials to the New York area. Anish Kapoor, the Turner Prize-winning artist, has designed a monolithic sculpture to anchor the British Memorial Garden, which will honor the 67 Britons who died in the World Trade Center. The garden will be in Hanover Square in Lower Manhattan, and has been designed by landscape architects Julian and Isabel Bannerman. In Brooklyn, Robert Ressler has designed an abstracted speaking trumpet that will serve as a beacon on the 69th Street Pier in the Bay Ridge Section. Kevin Lerner



Memorial projects include Frederic Schwartz's plans in Hoboken (above) and Westchester (right), Masayuki Sono's in Staten Island (bottom right), and Robert Ressler's in Brooklyn (bottom left).



IMAGES: COURTESY FREDERIC SCHWARTZ ARCHITECTS (TOP AND CENTER); MASAYUKI SONO (BOTTOM RIGHT); ROBERT RESSLER (BOTTOM LEFT)

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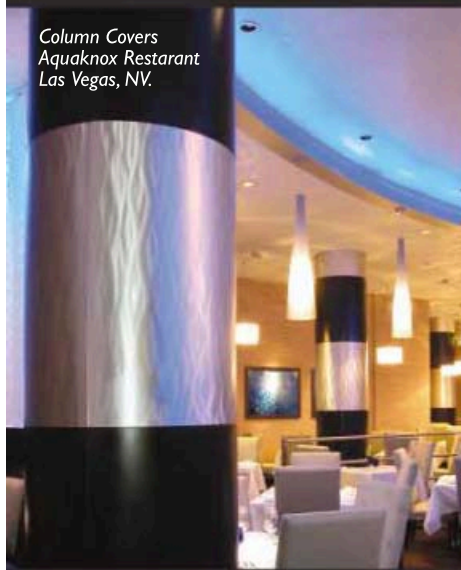
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Record News

MIT's Stata Center opens, raising issues about cost control

Last month, MIT officially opened Frank Gehry's much-anticipated Stata Center for Computer, Information, and Intelligence Sciences, the key-stone of the school's ambitious billion-dollar campus expansion.

The sprawling deconstructivist complex, which includes asymmetrical forms, interconnected interior spaces, and alternating titanium and brick surfaces, was at one point projected to cost \$200 million. The final cost was \$300 million. While Steven Holl's award-winning 2002 Simmons Hall dormitory, once estimated at \$60 million, came in at \$95 million. Both serve as case studies of institutional investment in serious architecture, with its potential for cost overruns and expensive program changes.

MIT's experience is hardly unique. Rem Koolhaas's Illinois Institute of Technology campus center ran into similar problems. Works by the likes of Gehry and Holl come at a premium and increase the risk of overruns, employing costly materials and often introducing techniques unfamiliar to most contractors, notes MIT executive vice president John Curry.

The projects also ran into a perfect storm of national and regional economic conditions, according to MIT officials, Gehry, and Holl's project architect Tim Bade. Having been planned during the go-go 1990s, MIT put several major projects up for bid just as the dot-com bubble burst and Boston's Central Artery Tunnel project tied up much of the area's construction capacity. The "Big Dig" drove up costs 25 percent in the Boston area, according to Gilbane Construction Company's 2000 review of MIT's construction plan, Curry says. Current trends in materials and fuel prices point to higher project costs, according to analysts, who blame the high cost of steel on a global shortage and U.S. import tariffs.

The Stata Center evolved from an early-1990s scheme for a 150,000-square-foot, roughly \$160 million building in keeping with MIT's Neoclassical main complex. A 1997 revision called for a 324,000-square-foot structure, at about \$200 million.

The tight market and MIT's addition of below-ground parking, a pedestrian thoroughfare, and day-care and fitness centers dramatically increased costs. As of May, the official total for the 730,000-square-foot complex was \$283.5 million, of which about \$31 million went to design, according to project manager Nancy Joyce, who notes that much of the project's contingency fund went to cover construction costs.



The new Stata Center features folded titanium planes and an interior "student street."



Nonetheless, the Stata Center project was "in the norm for this type of lab building in the U.S.," says William Mitchell, head of the Media Arts and Sciences Program and architectural adviser to MIT president Charles Vest. On the Stata project, "We value-

engineered, cut things, bit bullets," Gehry adds.

Legal delays, MIT's rush to occupy Simmons Hall by fall 2002 and its addition during construction of kitchen and dining facilities, contributed to that project's runaway costs, according to participants. As of early May, MIT was reviewing Holl's Simmons project for "errors and omissions," which are covered under the school's insurance policy, according to Curry.

In riding the late '90s investment wave and persevering through the downturn and project overruns, MIT's strategy has been one of "principled opportunism," says Mitchell. "It's an investment for a hundred years at the very least. You can't let short-term economic exigencies deter you." *Ted Smalley Bowen*

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Record News

New plans making London a skyscraper capital

In 1991, London had only two skyscrapers, by global standards: the 800-foot Canary Wharf Tower, designed by Cesar Pelli, and the 600-foot National Westminster Bank Tower. The city has strict rules on building height, and permission to build skyscrapers is granted on a case-by-case basis—meaning the ones that get through are notable landmarks, like Norman Foster's Swiss Re tower (page 218). Swiss Re's transformation of London's skyline unleashes the prospect of a new picture-postcard image of London as skyscraper development is set to catapult it into a new era.

Renzo Piano's London Bridge Tower, for instance, dubbed "The Shard of Glass," is as slim and sharp as Swiss Re is tubby and textured. At 1,016 feet, it will be Europe's tallest building. Its steeply sloping facades of white glass will make the tower seem partly to disappear into the sky. The building's design sparked controversy and claims that it would spoil the skyline; others have praised it for the elegant, tapering shape that prompted its nickname. The tower will house offices, a hotel, restaurants, apartments, retail, and three viewing areas.

The tower's approval last fall represents a triumph for Mayor Ken Livingstone's support of tall buildings. One year ago, Livingstone announced plans to add up to 15 new skyscrapers in the city by 2013, and immediately came under fire from government inspectors; he has defused their criticism by saying they're necessary to ensure London's economic health. "The Corporation of London needs to ensure that demand for office space can be met within the Square Mile [where much of the city's financial industry is located]," says Judith Mayhew, who heads up policy and resources for the Corporation of London, the municipal governing body of the city. "In this context, tall office buildings are becoming increasingly necessary as a result of the efficient use that they make of the limited land available."

Numerous other projects point to the emergence of skyscrapers as a reality in the U.K.—the result of client demand for floor space as well as the iconic glory of their street presence. Recent tall

buildings include Richard Rogers's 122 Leadenhall Street, whose slender, tapering form is strikingly similar to Piano's "Shard." The 48-floor glass tower's transparency reveals its structural steel frame, with color and light adding depth and animation to the north-facing facade. It rises to a

height of 736.5 feet in the eastern cluster of tall buildings in London, which also includes the Heron Tower in Bishopsgate, designed by Kohn Pedersen Fox and approved in 2002. The 727-foot, 37-story tower arranges workplaces around a series of 11 triple-height atria. When completed in 2005, it will be one of the tallest buildings in the city. Mayor Livingstone reportedly joked "go back and make it bigger" when KPF initially presented a 590-foot tower.

Another skyscraper, the Minerva Building by Grimshaw Architects, also won recent planning permission. At 712 feet and 50 stories, it will provide more than 1 million square feet of office space. Its design is described by the architect as four open books standing with their spines erect, facing one another. Its facade, which enables natural ventilation, is projected to

cut energy use by two thirds and eliminate the need for air-conditioning most of the year.

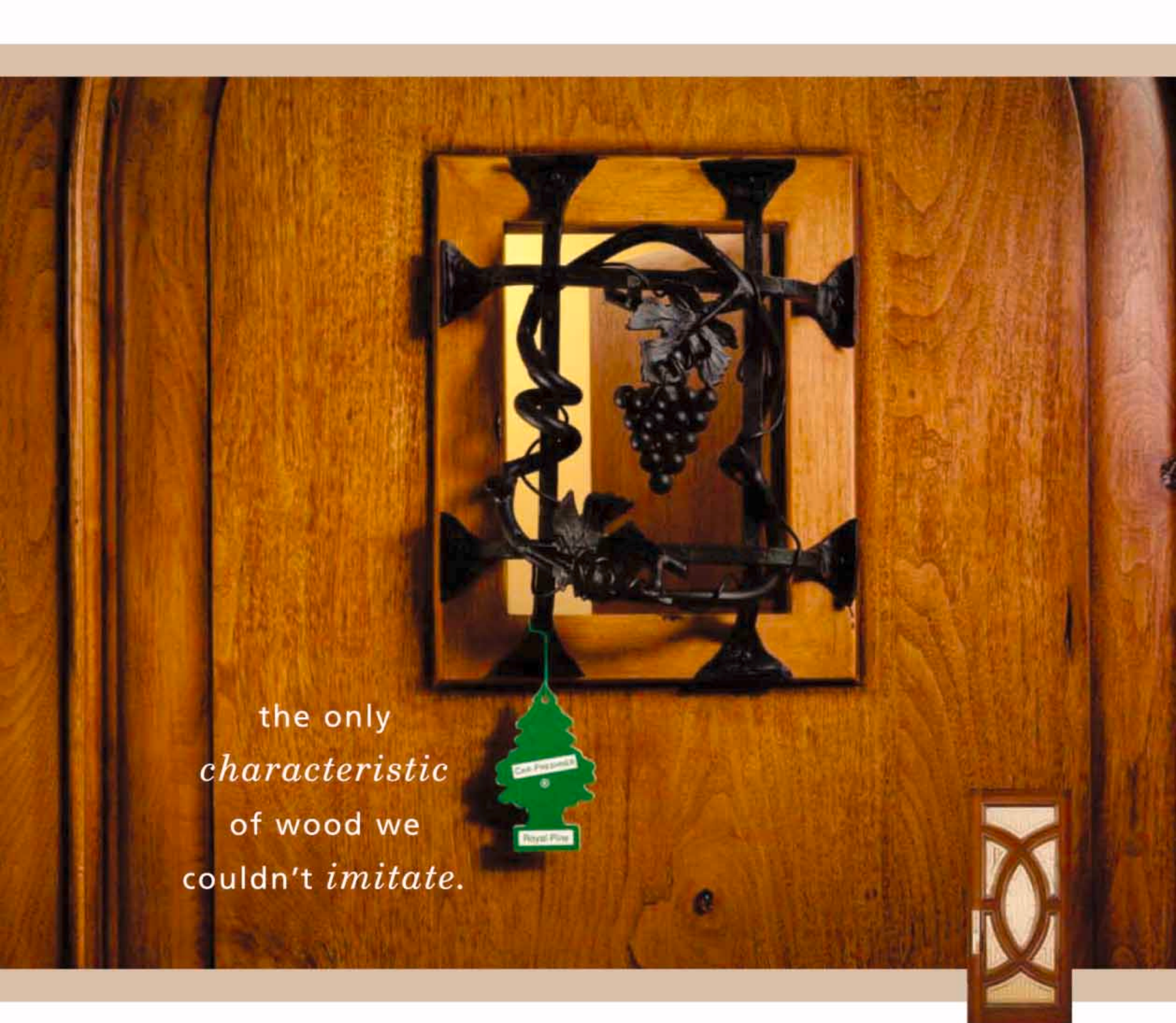
Even the architects of the London Eye have proposed a skyscraper design. Marks Barfield's 72-story Skyhouse would house shops, health clubs, nurseries, restaurants, and gardens. Yet most of the city's proposed skyscrapers are designed for purely commercial rather than residential or mixed-use needs.

Convincing evidence of the need for new skyscrapers in London will come as they fill up with tenants, theoretically. Meanwhile, the rigor of the mayor's policies and the Corporation of London's advocacy of good design will act in concert to ensure, with luck, that only exceptional projects are realized. "Our skyline has seen exciting and rapid change," says Peter Rees, chief planner for the Corporation. "The public can find that hard to accept, because it has been poorly served by architecture in the postwar period. Size isn't everything. I want to see buildings with flavor."

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Record News



Boston's new redevelopment zone (left) includes needed green space (in green, below).



Bay/Fort Point Channel, Boston Harbor, the new Harbor Islands National Park, and the Charles River.

"Boston is becoming a waterfront city again, but in a profoundly different way" than in its maritime and industrial past, says Greenberg.

The evolving plan calls for improving pedestrian access (both the transitions into the Greenway and throughout the waterfront area), widening sidewalks, planting trees, improving signage, and adding mixed-use and affordable housing to its waterfront. The integration scheme also promotes nighttime uses and year-round activities throughout the district and envisions connecting the area's multiuse trails to the waterfront district.

The Massachusetts Turnpike Authority is overseeing the \$14.6

New plans forming above and around Boston's "Big Dig"

Only a few hulking remnants of the I-93 platform clutter Boston's Surface Artery as the "Big Dig" wraps up, giving this swath of downtown the air of a movie lot at the end of a production. The next feature, something of a revival, is generating major buzz.

While much has been made of the above-ground projects capping the Big Dig, little has been done to clarify how they will work as a whole and mesh with the surrounding city. With this in mind, Boston officials have weighed in with a district-level scheme for the property along the fringes of the roughly 30-acre arc of reclaimed land, the new Rose Kennedy Greenway.

Urban planner Ken Greenberg of Toronto-based Greenberg Consultants presented the program at a public meeting recently, which also marked the kickoff of a 7-to-10-year public/private capital program to fund planning, improvements, and maintenance for areas adjacent to the artery. Construction of the Greenway's parks, cultural institutions, commercial, residential, and mixed-use projects is due to begin next year. The city has earmarked \$1 million in its 2005 budget for the effort.

The district boasts access to the South

billion federal-state Central Artery/Tunnel Project and is heading up the development of the state-owned surface artery. Nearby property owners and business tenants, whose real estate values and quality of life stand to benefit, will be tapped for contributions toward improvements and upkeep, and the city will seek philanthropic support for events and activities to be staged in the Greenway, and projects like the proposed fountain, according to Maloney.

The city and the Massachusetts Pike Authority have agreed on the broad outlines of plans for parks along the Greenway, particularly in Chinatown and the North End, and are hammering out differences over the central wharf district parks, according to Maloney. The parks are expected to be finished in 2007 at the earliest.

Complicating matters, ownership and maintenance of the Greenway parks is under dispute, as Governor Mitt Romney fights the Massachusetts Turnpike Authority for long-term control.

"The city [wants] to have a governance structure that can be responsive to the mayor," says Mark Maloney, director of the Boston Redevelopment Authority, the city's planning and development arm. *Ted Smalley Bowen*



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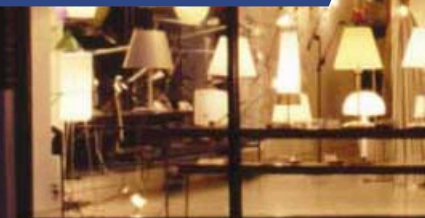
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Record News

National World War II Memorial opens in Washington

With little fanfare, the National World War II Memorial opened to the public in Washington, D.C., on April 29. Designed by a team led by Los Angeles-based architect Leo A. Daly, FAIA, and Rhode Island-based architect Friedrich St. Florian, AIA, the memorial honors the 16 million people



The rainbow pool, backset with granite pillars.

who served during the Second World War, and the more than 400,000 who died.

Located between the Washington Monument and the Lincoln Memorial, the design is dominated by the Memorial Plaza, a round granite space lined with bronze plaques, and the Rainbow Pool, a curvi-

linear pond adorned with fountains on either end. Two 43-foot arches, signifying hostilities in the East and the West, mark entries on the north and south ends of the plaza, while 56 granite pillars, representing each state and territory, surround the plaza, connected by bronze oak and wheat wreaths.

The space is meant, describes St. Florian, to provide contemplative quiet, with simple stones looming above the tranquil (yet celebratory) fountain. "I didn't want to have any ornaments. I wanted just the details of the stones to speak," he says. Classical architecture, meanwhile, evokes the aura of stability and reason felt throughout most of the Capital, he adds. Critics, meanwhile, have complained that the memorial blocks the vista between the Washington Monument and the Lincoln Memorial, and that the design is too austere and unrefined.

The memorial was conceived in 1993, and construction began in September 2001. More than \$195 million in cash and pledges have been received for the project, with \$16 million from the federal government. At press time, an official dedication was scheduled to take place on Saturday, May 29—the Memorial Day weekend. S.L.

Paris unveils new ideas for Les Halles

The City of Paris recently unveiled four projects in competition for a complete redesign of the area known as Les Halles. For centuries, Les Halles had been the city's central market. By 1969, the neighborhood was choked by traffic, and the market was moved near Orly airport. In its place, the Forum des Halles, a half-buried commercial center, was built as the entrance to an important transportation hub. Then, in the 1980s, Paul Chemetov designed an extension to the underground complex, while a 10-acre park was created above. The result is a warren of disconnected spaces that together form the city's largest mall.

The city's main objectives for Les Halles are to create fluid and rapid access between underground levels and the city, to add value to the surrounding historic structures, and to improve security and the quality of the architectural landscape. Work must be phased to allow the 200 Forum businesses to stay open or be relocated.

The four finalists are AJN/Jean Nouvel, MVRDV/Winy Maas, OMA/Rem Koolhaas, and



Seura/Mangin employ modern lighting and colors.

Seura/David Mangin. Nouvel's project covers the most area, adding buildings along both sides of the park and out into the neighborhood. Koolhaas has created transparent "control towers" that evolve from the underground layers like volcanic eruptions, while his "canyon" opens the view to the train concourses below. All four projects used the idea of a dynamic vertical opening leading down to the trains. Maas has then added a layer above ground with alternating areas of garden and transparency. Mangin's plan creates a central axis leading to the old commodities exchange building, converted into a new cultural and restaurant hub.

Projects are on display within the Forum, and Parisians have been encouraged to vote for their favorite. A winner will be chosen in late June, and first phase construction is to be completed by 2007. Claire Downey



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Record News

Adjaye to design Denver Contemporary



The Denver Museum of Contemporary Art recently announced its choice of David Adjaye of Adjaye/Associates, London, to design its permanent building.

The 15,000- to 20,000-square-foot structure will provide the museum—which currently has no permanent home—with spaces for galleries, education, lectures, and movies, as well as an outdoor sculpture center.

Adjaye was chosen among an impressive field that included TEN Arquitectos of Mexico, Snohetta of Norway, Rick Joy Architects of Arizona, Predock_Frane of California, and Gluckman Mayner Architects of New York. The selection process included extensive interviews from not only museum officials but from the public, in the form of open discussions.

"We asked for an architect who would build a building that supports rather than defines the



Adjaye (left) has already designed high-profile contemporary work like the Idea Store (above).

mission," notes curator and director Sydney Payton. "David had a direct relationship to the mission, and he had a clear understanding of contemporary art."

Adjaye/Associates, formed in 2000, has designed buildings for the Nobel Peace Center in Oslo, Norway, the Idea Store libraries in London (scheduled to be opened by the end of the year), and two libraries in Tower Hamlets, England.

Founded in 1996, the Contemporary is now located in a temporary space in Denver's Sakura Square. Daniel Libeskind's upcoming Denver Museum of Art is located less than a mile away, and the two buildings will give the city some of the most dynamic architecture in the country. "We hope it brings attention to Denver. It's part of an ongoing architectural dialogue with what's happening here," says Payton. The building is scheduled to open in late 2006. S.L.



Libeskind's Denver Museum will be just minutes away.

Piano's Los Angeles County Museum of Art Design approved

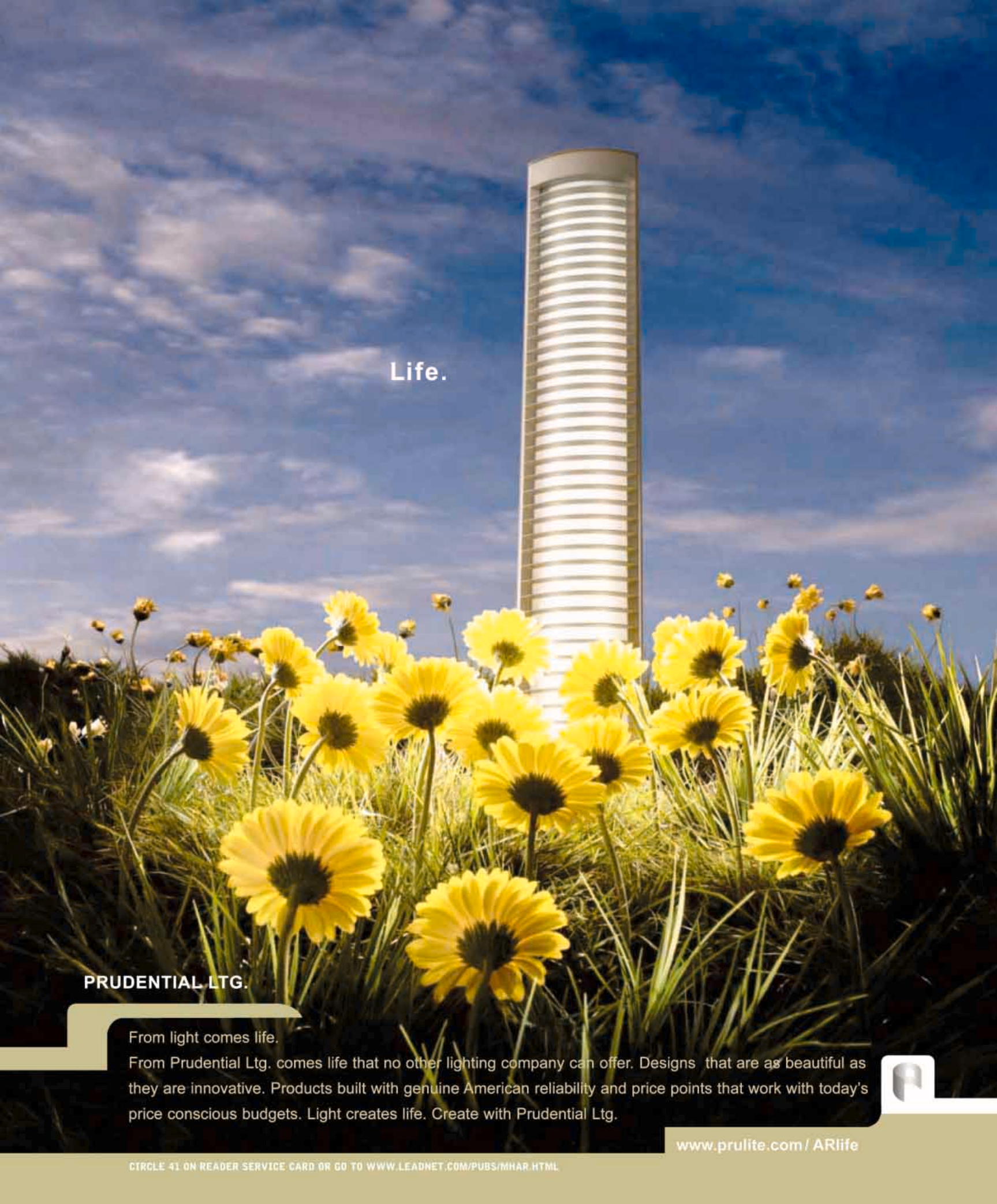
Renzo Piano's design (rendering, below) for an estimated \$100 million upgrade of the Los Angeles County Museum of Art (LACMA) recently received board approval. Unlike the previous scheme, presented by Rem Koolhaas in 2001 and later abandoned due to cost, Piano blends old buildings with new ones while still creating a cohesive architectural experience.

Plans call for a new three-story, 80,000-square-foot Broad Contemporary Art Museum, plus a 20,000-square-foot, glass-enclosed entry pavilion along the axis of Ogden Drive. Additionally, there will be an 800-foot-long pedestrian concourse that cuts through the entire site, linking the new structures to the LACMA West, the former May Company building at Fairfax Avenue and Wilshire Boulevard, and the existing complex to the east. In order to create more visual unity, the buildings will all be wrapped in light-weight fabric screens.

Museum officials hope to break ground on the improvements by December 2005, and finish by summer 2007. Tony Illia



IMAGES: COURTESY ADJAYE ASSOCIATES (TOP LEFT AND RIGHT); DENVER MUSEUM OF ART (CENTER); LOS ANGELES COUNTY MUSEUM OF ART (BOTTOM)



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Record News

New Entrance Completed for Brooklyn Museum of Art

The Brooklyn Museum of Art finally reopened its front doors in April, thanks to New York-based Polshek Partnership's front entrance and public plaza.

The \$63 million project uses an elaborate roof of stepped, shingled glass to create a 15,000-square-foot entrance pavilion, projecting a modern face in front of the McKim, Mead and White Beaux Arts masterpiece. The glass steps recall the building's original, tall entrance stairway, while the space, notes Polshek principle James Polshek, will be used for gatherings and fundraising events. But its main function, he adds, will be as "a meeting space for the community," like similar areas at the British Museum in London and the Louvre in Paris. "It's part of an emerging redefinition of the modern museum," says Polshek.

The redesign also reshapes 82,000 square feet of public space, with new trees, plantings, and pavings organized in a formal semicircular configuration. Already a highlight of the space for visitors



The new entrance, made mostly of glass and steel.



is a new fountain, designed by Los Angeles firm WET Design (which designed the Bellagio fountains in Las Vegas), which uses "dancing" water jets to create a kinetic show.

Other improvements include upgraded public amenities, a new floor surface and air-conditioning for the lobby, and a restoration of the Eastern Parkway facade of the building. The project's first phase took place from 1998 to 2000, while this most recent phase began in 2000. S.L.



Ford Calumet winner announced

Studio Gang Architects, led by Jeanne Gang, AIA, and Mark Schendel, AIA, were announced winners in April of a two-stage international competition for the \$6.8 million Ford Calumet Environmental Center in Chicago.

The proposed building's setting on the city's far-southeast side is an undeveloped wetland surrounded by heavy industrial uses that have ravaged the area's natural landscape for the past century. Sponsored by the Chicago Department of Environment, the Illinois Department of Natural Resources, and Chicago's Environmental Fund, the building will utilize LEED standards for sustainable building.

The 26,800-square-foot, single-story structure (rendering, above) will be built to a seed-shaped plan with a glass wall along its

south facade. Shaded by a porch constructed of steel rebar and other discarded man-made materials found near the site, the building is intended to sit lightly on the land. Salvaged bundles of steel columns will be driven into the marshy site to support the structure. Slag will be used as a surface material in the exterior garden and as aggregate

for terrazzo in the interior floors.

"We're weaving discarded materials into something more refined, like a basket," explains Gang. The firm's design was chosen from an original field of 108 architects representing seven countries.

Questions were raised after the announcement, when it was revealed that Studio Gang's predecessor firm, Studio Gang/O'Donnell, had prepared the initial program statement for the project, but David Reynolds, first deputy commissioner at the Department of Environment, points out that the draft was three years old, had changed in scope, and was for a different site. The jury's recommendation is currently being reviewed by the City's Public Building Commission. The building is scheduled to open in 2006. Ed Keegan

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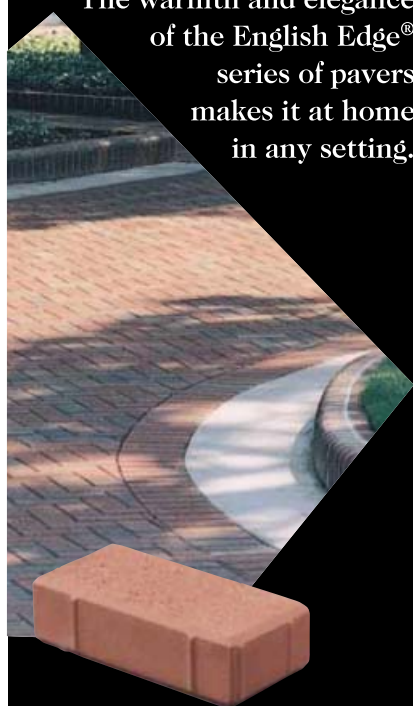


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Record News

AIA names the top 10 green projects for 2004

On Earth Day, April 22, the AIA's Committee on the Environment (COTE) named its seventh annual Top 10 Green Projects, a diverse collection of structures ranging from new construction to renovations, a single-family residence built in modular form to a large office building for a pharmaceutical company.

The top projects hail from seven states and Canada, representing more geographic diversity than last year's winners, half of which were located in California. The winning projects are The **Solaire** in New York City, by Rafael Pelli of Cesar Pelli & Associates Architects; the **City of White Rock Operations Building** in British Columbia, by Busby + Associates Architects; **Factor 10 House** in Chicago, by EHDD Architecture; the **Genzyme Center** in Cambridge, Massachusetts, by Behnisch, Behnisch & Partner; **Greyston Bakery** in Yonkers, New York, by Cybul & Cybul Architects and Maya Lin; the **Herman Miller Building C1** in Zeeland, Michigan, by Krueck & Sexton Architects; **Lake View Terrace Library** in Los Angeles, by Fields Deveraux Architects & Engineers and Greenworks; the **Pierce County Environmental Services Building** in University Place, Washington, by the Miller/Hull Partnership; **The Plaza at PPL**



The Lake View Terrace Library in Los Angeles.

Center in Allentown, Pennsylvania, by Robert A.M. Stern Architects; and the **Woods Hole Research Center** in Falmouth, Massachusetts, by William McDonough + Partners.

The variety of designers and projects signifies a nascent mainstreaming of sustainability, notes COTE chair Mark Rylander, AIA. "Our

emphasis has moved from nature centers and buildings that are clearly trying to accomplish environmental goals to a broader spectrum of building types whose programs include strong social and environmental commitments. We want to ensure that COTE isn't viewed as the solar energy wing of the AIA, but rather represents the core mission and values of all architects." Deborah Snoonian, P.E.



White Rock Building.

Preservationists lose fight for Two Columbus Circle

A planned redesign of Edward Durrell Stone's legendary but long-vacant 2 Columbus Circle moved one step closer to reality on April 15, when New York State Supreme Court Justice Walter Tolub dismissed a suit brought by local preservation groups. The suit sought to block the planned May sale of the building by New York City to the American Museum of Arts and Design (formerly the Craft Museum), contending that the City Landmarks Preservation Commission, by not holding public hearings, had failed to produce the comprehensive environmental impact review required for such property transfers.

Portland architect Brad Cloepfil, AIA, has proposed a renovation for the structure, the former Huntington Hartford Museum of Art, that replaces the existing monolithic marble facade with a semi-translucent cladding of terra-cotta tiles and geometric glazed incisions. The interior would feature a new atrium and circulation space, while a basement auditorium would be restored. Kate Wood, executive director of Landmark West, one of the groups that brought the suit, says they are considering their options, which include an appeal, additional lawsuits, and intervention or advocacy from the National Register of Historic Places and the National Trust for Historic Preservation. "The legal story for this building is not over," she says, but "the ultimate venue might be the court of public opinion." Thomas De Monchaux

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Record News

Holocaust Center's design conjures up difficult memories

The Holocaust Memorial Center in Farmington Hills, Michigan, outside Detroit, opened its controversial new building last month.

The structure, designed by Neumann/Smith & Associates of Southfield, Michigan, uses steel cable wrapped around a redbrick facade to evoke imagery of a Nazi concentration camp. Furthermore, glass and brick towers along the building's periphery give the impression of guard towers, while alternating grays on the facade of some buildings in the complex are meant to remind visitors of the uniforms of Holocaust prisoners.

"I think you need a building that is strong enough to at least make people wonder and to make people want to come inside," says Ken



The Center's walls look like the gates of a concentration camp.

Neumann, a principal at Neumann/Smith. The 50,000-square-foot, two-story building, designed in 2001, replaces the museum's former location in West Bloomfield, Michigan; it was the country's first Holocaust museum. Inside the Memorial Center stand exhibits depicting the horrors of the time to the post-Holocaust period. The museum

campus also includes a Museum of European Jewish Heritage, and the International Institute of the Righteous, meant to publicize altruistic acts throughout history.

While Neumann acknowledges that the design has prompted some consternation for its brutal and difficult imagery, he says that, overall, people are quite supportive. "It's a shame we've hurt people with the design, but it's violent as that time was violent. Most have felt this is a positive thing. It tells their history. You want to show young people the result of not caring about their fellow man." S.L.



Glass and steel structures are reminders of watchtowers.

McGraw-Hill hosts construction summit in Beijing

As word spreads that China is undergoing the world's largest construction boom, many more people are taking an interest in the Middle Kingdom. It was in this spirit that professionals from around North America, China, and the world gathered in Beijing's Kempinski Hotel from April 14–16 for the 2004 Global Construction Summit. The conference, convened by McGraw-Hill Construction, ARCHITECTURAL RECORD's parent company, was the first of its kind, bringing more than 500 contractors, developers, designers, and officials together to discuss the opportunities and challenges that lay ahead in the burgeoning Chinese construction market.

The summit's plenary meeting addressed the issues facing the Chinese market in the face of unprecedented growth. Other sessions dealt with how to get work and how to get paid, breaking into the market, creating successful results, and balancing the needs of development and sustainability. ARCHITECTURAL RECORD's editor in chief, Robert Ivy, AIA, led two panel discussions with architects and engineers with considerable experience in China. They shared their experiences, discussing the opportunities, their hopes for the future, and the foreboding challenges, from regulatory differences to the large cultural chasm between China and the West. *Daniel Elsea*

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A third New York high-rise for Meier



Fresh off the completion of his luxury condominiums on Perry Street along the Hudson River, Richard Meier is planning a similar luxury hi-rise (above photo, far right) next door.

The 16-floor, 31-unit tower, at 165 Charles Street, will very closely resemble the architect's two designs at 173-176 Perry, just adjacent. All will be tall, Minimalist luxury buildings made primarily of

glazed glass and steel. Unlike the Perry Street project, Meier will also be designing the 11- to 22-foot-tall interiors of the new building. These will include leather seats similar to those Meier designed for the Getty Center in Los

Angeles. The tower's ground floor will also feature more than 1,500 square feet of commercial space.

"Charles Street gives us the opportunity to further develop and evolve the design of my first two towers," says Meier. "It's like music. One note is nice, but as you add notes, you can create something different." Completion is scheduled for spring 2005. S.L.



Chipperfield planning museum in Iowa

British architect David Chipperfield is designing his first museum project in the continental United States: the Figge Art Museum (FAM) in Davenport, Iowa (above, at right).

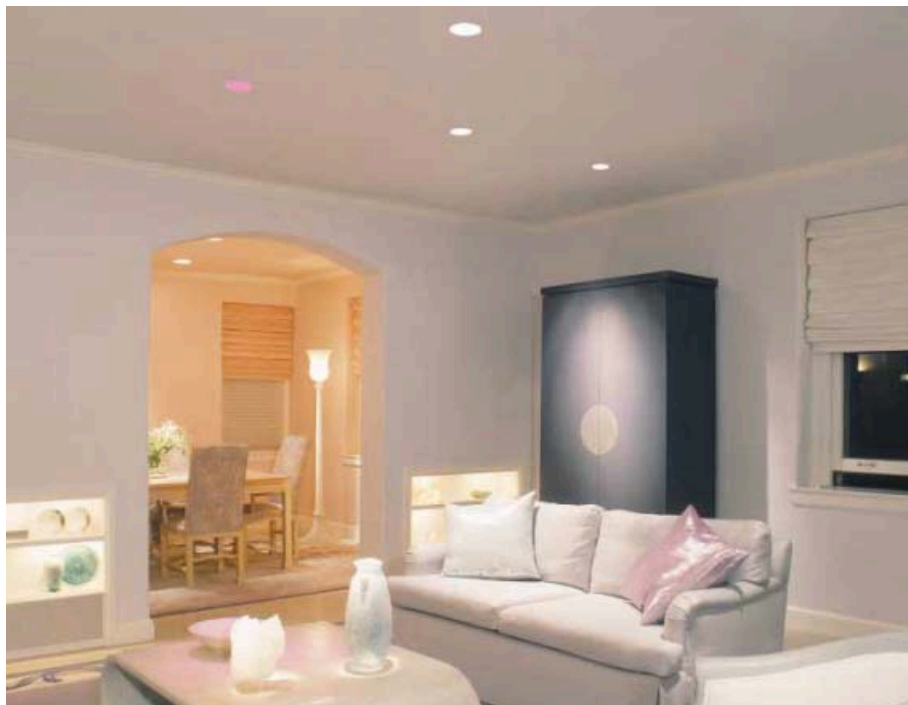
Founded in 1929, FAM, formerly known as the Davenport Museum of Art, has transformed itself from a small-scale local space to an ambitious institution. The new museum, located on the city's downtown Mississippi River waterfront, reflects the change. The building, and its desirable location, will allow it to continue to expand, museum officials say.

The \$34.5 million, 100,000-

square-foot museum will be surrounded almost completely with opaque and transparent glass surfaces and fritted with horizontal banding to define the formal elements. It will have an inner and outer skin: The inner will be composed of double-glazed glass and perforated-metal panels, and the outer will be made of fritted and clear glass and will act as a rain and wind screen. An outdoor plaza will provide a sculpture garden and public space. The museum highlights a \$113.5 million initiative to revitalize the city's downtown area. Opening is scheduled for July 2005. S.L.

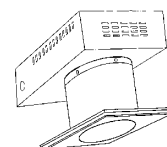
IMAGES: COURTESY RICHARD MEIER & PARTNERS (LEFT); FIGGE ART MUSEUM (RIGHT)

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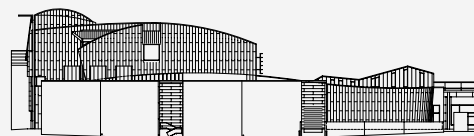


Weber State University – Ethel Wattis Kimball Visual Arts Center, Ogden, UT, USA, Client: Weber State University, Ogden, UT, USA, Architect: Prescott Muir Architects, Salt Lake City, UT, USA

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News Briefs

Renovation for Yale Art Gallery

Yale University Art Gallery, the oldest college museum in the U.S., has begun restoration of its main building, originally designed by Louis Kahn and opened in 1953.

The Gallery was Kahn's first significant commission, and is considered one of his masterpieces. The



The Yale Art Gallery will be upgraded.

renovation is being undertaken by Polshek Partnership Architects in New York, which is also working on the master plan for the Yale Arts Area.

The building, known for its

intensely quiet, spiritual atmosphere and signature tetrahedral ceiling, will be closed for the restoration until spring 2006. The gallery will display its collections of American paintings, sculpture, and decorative arts in the Gothic-style wing.

The restoration will address much-needed structural issues, such as window and wall repair and upgrading of the roof, and it will open the building up by removing partitions scattered throughout.

"I was a student of Louis Kahn's in 1954," says partner Jim Polshek in a written statement. "The opportunity to restore this early masterpiece to the architect's original vision and to protect it for the future is extraordinary." *S.L.*

Workers begin to install Olympic Stadium roof

After long delays, contractors recently began to install the roof



Olympic roof slides into place.

of the Olympic Stadium in Athens. Designed by Santiago Calatrava, the roof covers 269,000 square feet and is made of massive white steel and tinted Plexiglas. Assembly was completed in mid-April, and now builders are sliding the tubular steel arches into place on top of the stadium.

The stadium was first employed in 1982 and has since been refitted for the games. Calatrava is also designing the sports complex master plan, the roof for the Olympic Velodrome, and landscape and sculptural elements, such as the "Nations Plaza" public space and the undulating "Nations Wall." *S.L.*

Finalists named for Vietnam Veterans Memorial Education Center

Four teams have been selected in the second round of competition for the Vietnam Veterans Memorial Education Center, which will complete the assemblage of structures on Washington, D.C.'s National Mall.

The four teams are Ann Beha Architects, Architectural Research Office, Michael Graves & Associates, and Polshek Partnership.

According to Jan E. Scruggs, president of the Vietnam Veterans Memorial Fund, the teams are awaiting completion of site analysis before submitting final designs. The 20,000-square-foot facility of exhibition and support spaces is expected to be dug into an elevated area halfway between the memorial and Constitution Gardens. In June, the jury will choose the winning team. The fund hopes to raise \$25 million for the center's construction within three years, break ground in 18 months, and complete the building in 2009. *Andrea Oppenheimer Dean*

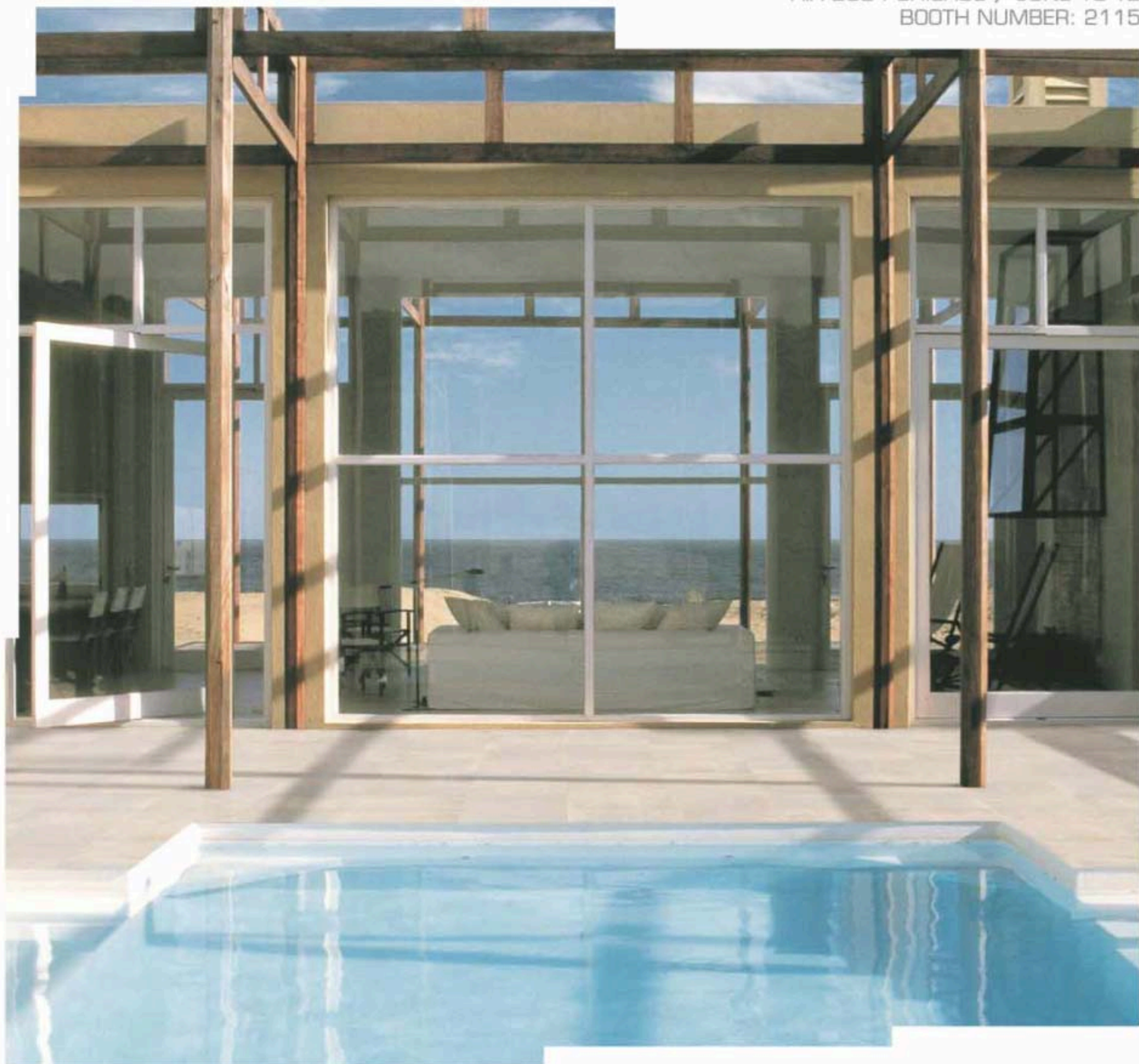
IMAGES: COURTESY JANE COLLINS & ASSOCIATES (LEFT); THE KREISBERG GROUP (RIGHT)

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Celestial ceiling crowns Texas attraction



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Nothing says Texas like an impressive Lone Star. So designers insisted on a Texas-sized star atop the two acre atrium ceiling at the Gaylord Texan Resort.

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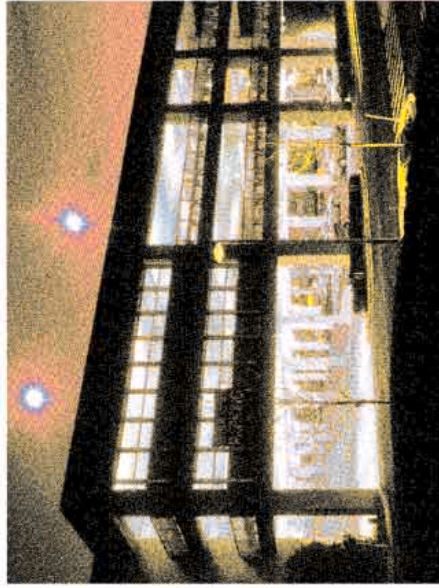
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Dates & Events

New & Upcoming Exhibitions

Zaha Hadid **New York City**

June–July 2004

Paintings, drawings, and indoor and outdoor objects by the recent Pritzker Prize-winning architect will be featured at Max Protetch Gallery. Call 212/633-6999 or visit www.maxprotetch.com for more information.

Liquid Stone: New Architecture in Concrete **Washington, D.C.**

June 19, 2004–January 23, 2005

A survey of cutting-edge architecture in which the use of concrete is an essential aspect of the design. The exhibition will demonstrate that architects are using concrete to achieve incredibly varied—sometimes even diametrically opposed—aesthetic objectives. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org for further information.

Ronan and Erwan Bouroullec **Los Angeles**

June 20–October 18, 2004

The first North American exhibition to focus on the work of French designers Ronan and Erwan Bouroullec. The brothers have burst on the international design scene in the past few years with their futuristic furniture, products, and interior designs. At the Museum of Contemporary Art. For information, call 213/621-2766 or visit www.MOCA-LA.org.

Beyond the Box—The Architecture of William P. Bruder

Los Angeles

July 15–October 14, 2004

An exhibition of Will Bruder's work will be on view at A+D Museum. For more information, call 310/659-2445 or visit www.AplusD.org.

Ongoing Exhibitions

Rene Burri Photographs **New York City**

Through June 5, 2004

The exhibition focuses on Burri's architectural photographs, including images of Le Corbusier and his work, such as the Chapel at Ronchamp; the structures of Mexican architect Luis Barragan; Oscar Niemeyer's buildings in Brasilia; and the preparations for the Montreal Expo in 1967. At the Gallery at Hermes. For information, visit www.hermesofparis.com.

Petra Blaisse: Harvey S. Perloff Chair Workshop **Los Angeles**

Through June 11, 2004

Amsterdam-based designer Petra Blaisse explores a fascination with unique materials through wall coverings and built projects created since 1991 with her firm, Inside Outside. Blaisse holds the Harvey S. Perloff Chair for spring quarter in the UCLA department of architecture and urban design. She conducted a five-day workshop with students, creating a site-specific work that is included in this exhibition. At the Perloff Gallery. Visit www.aud.ucla.edu or call 310/267-4704.

Subway Style: Architecture and Design in the New York City Subway **New York City**

Through June 18, 2004

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Dates & Events

Celebrating the 100th anniversary of the New York City subway system, the exhibition explores the aesthetics of the subway, featuring a broad range of historic artifacts, archival documents, drawings, and vintage and contemporary photographs from the collection of the New York Transit Museum. At the UBS Art Gallery. Call 212/713-2885 or visit www.ubs.com.

Drawn by the Architect Amsterdam

Through June 19, 2004

Now that the computer is changing the way drawings are produced and filed, do architects still sometimes put their ideas down on paper and, if so, in which phases of the design process do they do that? ARCAM collected spectacular original sketches ranging from doodles, notes, and travel impressions to detailed drawings and presentation sketches—sketches done with pencil, paint or felt-tip pen on paper, in notebooks or still on the roll, made for oneself,

clients, or a book. At Architectuurcentrum. Call 020/620-4878 or visit www.arcam.nl.

Envisioning Architecture: Drawings from the Museum of Modern Art, New York Washington, D.C.

Through June 20, 2004

The broad spectrum of 20th-century architecture and the depth of its artistic expression are revealed in this selection of works from MoMA's extraordinary collection of architectural drawings. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

City Works Los Angeles

Through July 1, 2004

An exhibition organized by Cityworks Los Angeles Communities Under Construction with participation by all L.A. design and architecture schools. At A+D Museum. Call 310/659-2445 or visit www.AplusD.org.

The Austrian Phenomenon: Concepts, Experiments—Vienna Graz 1958–1973 Vienna

Through July 12, 2004

The exhibition examines this Austrian avant-garde and attempts to come close to providing an overview of the conceptual and experimental tendencies that emerged in Vienna and Graz between 1958 and 1973. At Architekturzentrum Wien. Call 431/522-3115 or visit www.azw.at for information.

Material Trends in Modern Italian Furnishings New York City

Through July 14, 2004

The region of Lombardy is the center of Italian design ingenuity, with unparalleled excellence in creativity and manufacturing values. The exhibition features recent products in furniture, textiles, consumer electronics, and fixtures from Alias, Artemide, Pierantonio Bonacina, Brionvega, Bticino, Caimi Brevetti, Con&Con, Danese, Flexform, Futura, Gruppo Industriale Busnelli, Kartell, Luceplan, Merati, Nemo, Paola Lenti, Porro, Regia, Tronconi, Serafino Zani, and Zucchi. This exhibition coincides with the 16th Annual International Contemporary Furniture Fair. At Material ConneXion. Call 212/842-2050 or visit www.MaterialConneXion.com for more information.

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Dates & Events

Modern Means: Continuity and Change in Art, 1880 to the Present Tokyo

Through August 1, 2004

A landmark survey of more than 300 works of architecture, design, painting, sculpture, drawing, prints, photography, and electronic media selected from the extensive collection of The Museum of Modern Art in New York. The exhibition explores the blurred relationship between "modern" and "contemporary" to establish an

effective narrative between past and present. At the Mori Art Museum. For more information, visit www.mori.art.museum.

Affordable Housing: Designing an American Asset Washington, D.C.

Through August 8, 2004

This exhibition demonstrates that low-cost housing need not be of low quality and explores the potentially far-reaching benefits of good

design for residents and their broader communities. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Symphony in Steel: Ironworkers and the Walt Disney Concert Hall Washington, D.C.

Through November 28, 2004

This exhibition presents more than 100 compelling photographs by Gil Garcetti, including spectacular images of the completed building. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Jorn Utzon: The Architect's Universe Humlebaek, Denmark

Through August 29, 2004

This is a show illustrating Utzon's working method—his process—focusing both on the work and its sources of inspiration. At Louisiana. Call 45/4919-0719 or visit www.louisiana.dk for more information.

SouthwestNET: PHX/LA Scottsdale, Ariz.

Through September 5, 2004

An exhibition of recent works by six emerging artists from Phoenix and Los Angeles. Although separated geographically, these artists explore similar issues related to the Southwest's unique version of urbanism, from its ubiquitous Postmodern architecture to the impact of suburban sprawl on the desert environment. At the Scottsdale Museum of Contemporary Art (SMoCA). Call 480/994-2787 or visit www.smoca.org for information.

Samuel Mockbee and the Rural Studio: Community Architecture Washington, D.C.

Through September 6, 2004

Both a practical program for educating future architects and a vital force for improving living conditions in one of the nation's poorest regions, Auburn University's Rural Studio began with the drive and vision of Samuel Mockbee (1944–2001), who was posthumously awarded the 2004 AIA Gold Medal. The exhibition includes both models and photographs of the projects, as well as a number of Mockbee's paintings and sketchbooks from the Rural Studio. At the National Building Museum. Call



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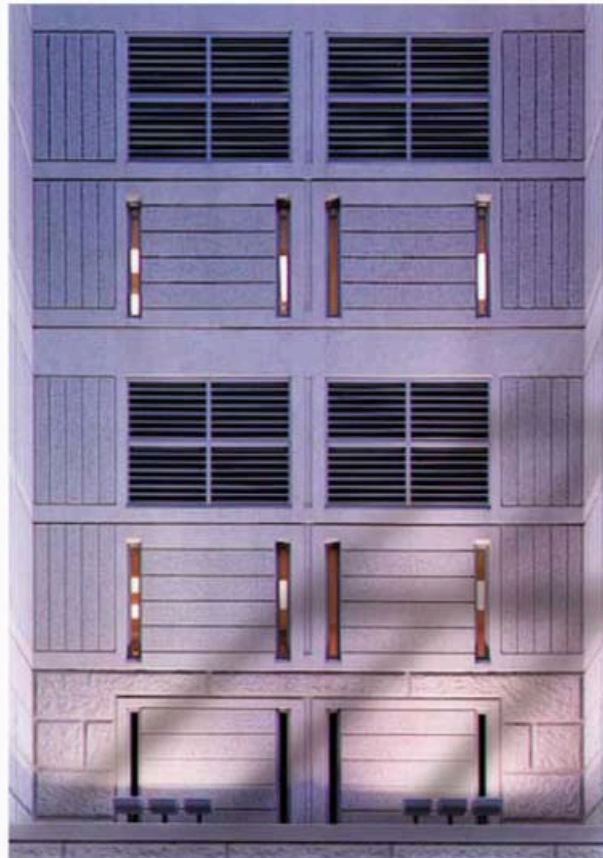
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Dates & Events

202/272-2448 or visit www.nbm.org for further information.

Solos: Future Shack Washington, D.C.

Through October 10, 2004

Architecture for Humanity's Future Shack is a shelter that can be constructed anywhere, very quickly, to address the needs of refugees as well as of victims of natural disasters. Designed by Australian architect Sean Godsell, the prototype will be built in the Cooper Hewitt's Arthur Ross Terrace and Garden as part of the summer Solos series. At the Cooper-Hewitt, National Design Museum. For further information, call 212/849-8400 or visit www.cooperhewitt.org.

Unbuilt Chicago

Chicago

Through January 16, 2005

Featuring approximately 90 drawings, plans, and models for architectural projects in Chicago that were never built, the exhibition provides a cross section of projects from the 1880s to the present. Many notable architects are represented, including Dankmar Adler, Daniel Burnham, Alfonso Iannelli, Ludwig Mies van der Rohe, Louis Sullivan, Harry Weese, and Helmut Jahn. At the Art Institute of Chicago. For more information, call 312/443-3600 or visit www.artic.edu.

a_show: Austrian Architecture in the 20th and 21st Centuries

Vienna

Through 2005

Due to the expansive nature of its contents, a_show is subdivided into three sections and presented in three stages. It provides a ramble through historic and contemporary Austrian architecture and explores the most essential factors in establishing a cultural identity. At Architekturzentrum Wien. For more information, call 431/522-3115 or visit www.azw.at.

A.R.E. Workstation Phoenix

Permanent Installation

The A.R.E. (Architects Registration Exam) Workstation project was inspired by the recent move on NCARB's part to come up with the

ARE Version 3.0. In the AIA AZ Gallery. For further information, call 602/275-6830 or visit www.durrant.com.

Aerospace Design: The Art of Engineering from NASA's Aeronautical Research

Washington, D.C.

Through December 5, 2004

The exhibition features more than 65 artifacts from NASA's collection, including wind tunnel models and designs for conceptual airplanes. At the Octagon. Call 202/638-3221 or visit www.theoctagon.org.

Lectures, Conferences, Symposia

Forum Barcelona 2004

Barcelona

May 9–September 26, 2004

Forum Barcelona is an innovative and creative platform through which to explore and analyze the major cultural and social challenges facing the world of the 21st century. It is a festive journey designed to bring three main themes to life: cultural diversity, sustainable development, and conditions for peace. For 141 days, it is a place where visitors can experience cultures and entertainment from around the world. Performances, lectures, exhibitions, workshops, games, and marketplaces make up this major event. The various activities and events take place all over the city of Barcelona. For more information visit www.barcelona2004.org.

Life, Liberty, and the Pursuit of Landscape Architecture

Washington, D.C.

June 1, 2004

In a free society, security concerns and other challenges can compromise our ability to live in safe environments. Leonard Hopper, FASLA, past president of the American Society of Landscape Architects and chief landscape architect for the New York City Housing Authority, will address how landscape architects help shape the world and improve the quality of our lives. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

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hidden by artist Andrea Baruffi in his "Is daily life fun or what?" illustration and identify the corresponding location coordinates.

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Dates & Events

International Greening Rooftops for Sustainable Communities Conference, Awards, and Trade Show Portland, Ore.

June 2-4, 2004

Experts in diverse fields from around the globe will network and share knowledge about the benefits of green roofs, new research findings, policy developments, and the latest in green-roof products and services. Topics covered in panel discussions will include LEED, plant performance, policy initiatives, smart growth, biodiversity and agriculture, storm-water issues, and design. At the Hilton Hotel. For further information, call 416/686-5887 or visit www.greenroofs.ca/grhhc/conference.htm.

The 2004 Bruce Goff Centennial Celebration Bartlesville, Okla.

June 5-8, 2004

The 100th anniversary of the birth of Bruce Goff and the 137th of Frank Lloyd Wright will be celebrated by viewing buildings of both Goff's and Wright's design, films of Goff, architectural and other drawings of Goff's, and exhibitions of work by those who learned from him. For further information, call 404/237-8031.

Security Workshop Franklin Park, Ill.

June 7-10, 2004

YSG Door Security Consultants, an architectural hardware and security solutions company, is offering a Security Workshop to provide participants a better understanding mechanical security and electrified hardware to develop a fully integrated locking security system. At the YSG Satellite Training Center. Call 800/438-1951 or visit www.ysgsecurity.com.

Wolf D. Prix Washington, D.C.

June 8, 2004

Coop Himmel(b)lau creates deconstructivist architecture that provocatively breaks away from traditional structures to expose inherent aesthetic and technological tensions. Wolf D. Prix, copincipal of the Vienna, Austria-based studio, will discuss the firm's award-winning work, including the UFA-Cinema Center in

Dresden, Germany; Vienna's SEG Apartment Tower; the Musée de Confluences in Lyon, France; and the Art Museum in Ohio, their first major U.S. commission. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org for more information.

Inspire Customer Loyalty: What Clients Have to Say Chicago

June 9, 2004

A one-day seminar being held prior to the start of the AIA Annual Convention. Marcy Steinberg, researcher and author of *The Inside Scoop: Proposals and Interviews from the Client's Perspective*, will provide insight into what triggers customer loyalty and outline research data from both a national and regional perspective. At the Metropolitan Club in the Sears Tower. Visit www.smps.org.

The AIA 2004 National Convention and Design Exposition Chicago

June 10-12, 2004

The premier design and construction industry event with firsthand industry updates and cutting-edge products and services that will shape the future of architecture. At McCormick Place. For further information, call 800/242-3837 or visit www.aia.org.

40th IMCL Conference: Building Cities for Community & Identity London

June 13-17, 2004

Topics will include traditional town planning and civic values, the built environment and the healthy city, and celebrating the European square. At the University of Notre Dame London Centre. Visit www.livablecities.org for more information.

The First Northeastern Regional Scrap Tire Conference Albany, N.Y.

June 15-16, 2004

The goals of the conference are to improve the efficiency of the scrap-tire industry and to promote regional cooperation on scrap-tire programs. Topics to be discussed include:

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Dates & Events

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Antoine Predock Washington, D.C.

June 16, 2004

To celebrate the opening of *Liquid Stone: New Architecture in Concrete*, architect Antoine Predock will discuss his work, which responds in many ways to both the natural and the cultural landscapes. Practicing in Albuquerque, New Mexico, for more than 30 years, Predock is an internationally acclaimed architect who draws from the elemental forces of a site, as well as its history and myth, to create an "architecture of ritual." Predock's Shadow House in Santa Fe, New Mexico, is featured in the exhibition. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

The Mediterranean Medina Pescara, Italy

June 17-19, 2004

An International seminar aiming at the study of the particular physical characters and the main transformations of the Mediterranean City. The city has built up its identity through the reuse and modification of the previous urban remains. At the Faculty of Architecture of Pescara. Visit www.unich.it/idea.

Building Green Washington, D.C.

June 21, 2004

To celebrate the summer solstice, Helen English, executive director of the Sustainable Buildings Industry

Council, will discuss ways to help home builders, architects, home owners, and others better locate general information about such topics as community and site planning, energy, energy-efficiency, the building envelope, water use, indoor environmental quality and green materials. This lecture draws on material from *Green Building Guidelines: Meeting the Demand for Low-Energy, Resource-Efficient Homes*, which was developed by homebuilders for homebuilders. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Their Last Battle: The Fight for the National World War II Memorial

Washington, D.C.

June 30, 2004

A casual conversation between a Congresswoman and one of her constituents in 1987 grew into an epic struggle to build the National World War II Memorial—an effort that lasted more than four times as long as it took America to fight the war itself. Nicolaus Mills, Sarah Lawrence College, will recount the struggle and chronicle the development of the Washington Mall, from its origins as swampland to Maya Lin's controversial Vietnam Veterans' Memorial. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

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August 11-14, 2004

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Dates & Events

business.org for more information.

Houston Mod: Leo Marmol Houston

August 19, 2004

Leo Marmol, AIA, managing principal of Marmol Radziner + Associates of Los Angeles, will be the second annual speaker of the Houston Mod August lecture. He will give a talk about the preservation of Modern architecture. His firm is responsible for the restoration of Richard Neutra's Kaufmann House in Palm Springs and has been recognized in many national publications. At the MFAH Brown Auditorium. Visit www.marmol-radziner.com or www.houstonmod.org.

ARMA 2004 Summer Meeting Kansas City, Mo.

August 24-26, 2004

The Asphalt Roofing Manufacturers Association (ARMA) is the North American trade association representing the manufacturers and suppliers of bituminous-based residential and commercial fiberglass and organic asphalt shingle roofing products, roll roofing, built-up roofing systems, and modified bitumen roofing systems. At the Fairmont Hotel. Call 202/207-0917 or visit www.asphaltroofing.org.

Introduction to the 2003 International Building Code for Design Professionals Las Vegas, Nev.

September 27-28, 2004

The University of Wisconsin, Madison, Department of Engineering Professional Development offers this course, which will provide a broad overview of the key nonstructural components of the International Building Code, focusing primarily on those requirements that deal with fire and life-safety concerns.

At the University of Wisconsin. Contact Jeffrey A Lackney at 608/262-0638 or visit epdweb.lengr.wisc.edu/webG022.

NeoCon East Baltimore, Md.

October 6-7, 2004

This year's NeoCon East promises to attract thousands of attendees representing regional architecture, design and facilities management communities, as well as federal government designers, buyers, and specifiers. New to NeoCon East 2004 is a lighting pavilion and the Architectural Stone and Ceramic Tile Exposition. For information, visit www.merchadisemart.com or call 800/677-6278.

Urban Waterfronts 22: Gathering by the Water Milwaukee, Wis.

October 14-16, 2004

The annual international conference on waterfront planning, development, and culture will convene 300 people from around the globe from all the varying disciplines involved in this dynamic field. More than 30 speakers will cover a wide range of issues. Visit www.waterfrontcenter.org for more information.

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October 14-16, 2004

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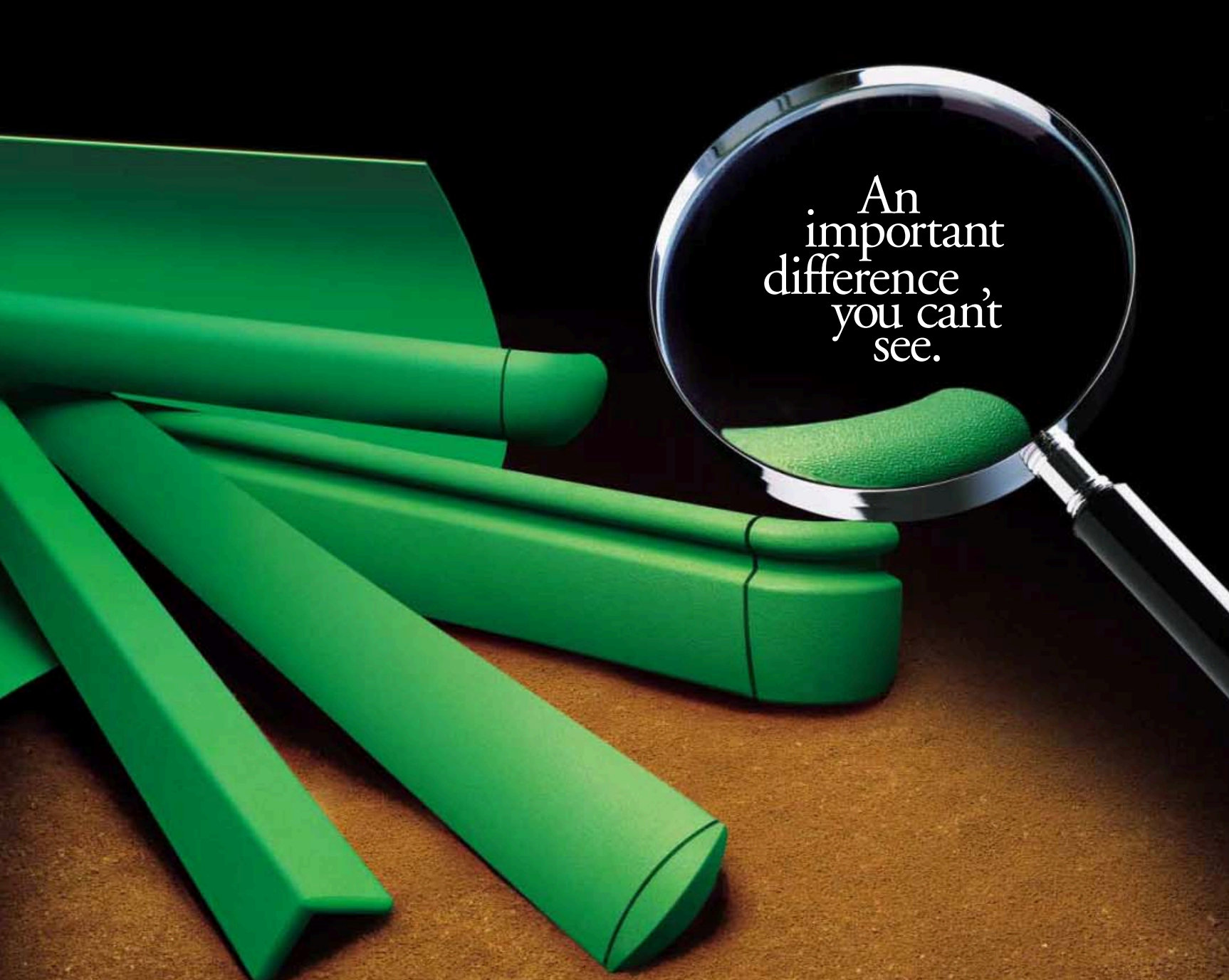
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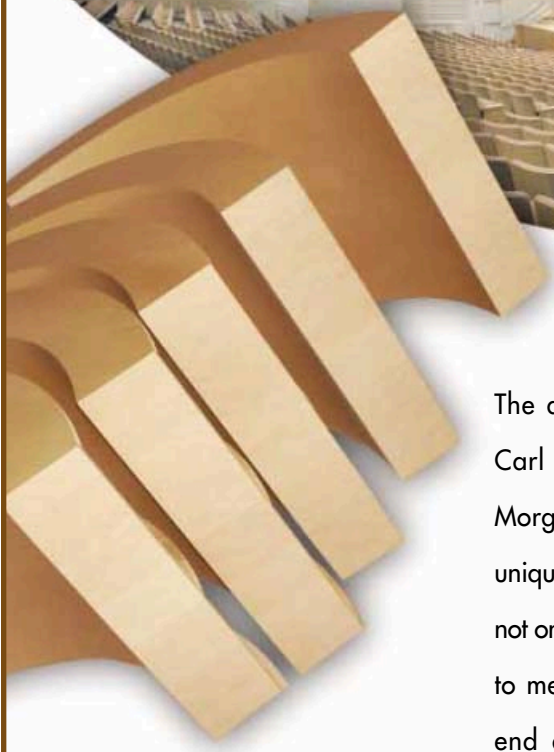
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Awards Program

Deadline: July 15, 2004

The Waterfront Center's announces its 18th annual international awards program for projects, plans, and grassroots citizen efforts. Visit www.waterfrontcenter.org for more information.

Central Glass International Architectural Design Competition 2004: AsiaFront Village

Deadline: July 26

The AsiaFront Village ought to be a place of further promotion of the unique culture interspersed throughout Asia and the enjoyment of its results. It can be located anywhere in the world, in the city or in the suburbs. It can be consolidated into one facility, or it can be an international conference facility or training center, a lodging facility or complex. For information and submission requirements, visit www.japan-architect.co.jp.

2004 Texture Design Contest Chandler, Ariz.

Deadline: July 30, 2004

Meltdown Glass Art & Design is inviting creative professionals interested in decorative glass to compete in their Texture Design Contest. For further information, call 800/845-6221 or visit www.meltdownglass.com.

Norwalk Housing Design Competition Norwalk, Conn.

Deadline: August 13, 2004

In response to the need for below-market-rate housing in the city of Norwalk, the Housing Authority of Norwalk is sponsoring a housing design competition for exemplary site and unit plans for first-time home buyers, entry- and mid-level professionals, and fixed-income seniors. Call 203/857-0200 or visit www.swinter.com/NorwalkHousingDesignCompetition.html for information and submission guidelines.

The 2004 Ecohouse Design Awards

Deadline: August 31, 2004

The competition is open to any student, or group of students, in a school of architecture. The challenge is to design an Ecohouse able to survive without relying on a great deal of fossil fuel. Visit www.architecturalpress.com/companions/ecohouse.

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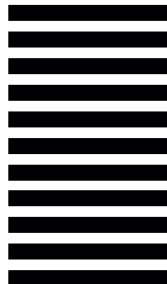
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Dates & Events

Ambience Design Competition

Deadline: October 31, 2004

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Green Tent Design Competition Los Angeles

Deadline: August 11, 2004

Online preregistration required by July 30, 2004, at www.greententcompetition.com

Ecoshack announces a competition to design an environmentally sustainable camping shelter—a green tent—for use in the Mojave Desert in and around Joshua Tree National Park. The competition is open to anyone with innovative design ideas inspired by Southern California's green lifestyle; architects, interior designers, product and furniture designers, graphic designers, artists, design students, and campers. Collaborative and multidisciplinary design teams are encouraged. Jurors for the competition include designer David Erdman of servo, SKDP graphic designer Stephen Kinder, Ecoshack founder Stephanie Smith, and the artist Andrea Zittel. Winners will be notified on August 25, 2004. Winning entries will receive cash prizes and will be prototyped on Ecoshack's 5-acre demonstration site in Joshua Tree, Calif. All entries will be exhibited in Joshua Tree during the High Desert Test Sites event October 23–24, 2004. For additional information visit www.greententcompetition.com

C2C Home Design and Construction Competition

Early Registration: July 15, 2004

Deadline: December 15, 2004

Design will lead to actual construction. Judges will include William McDonough and Randall Stout. Homes will be built with a goal of achieving the new standards of sustainability set up in *Cradle to Cradle: Remaking the Way We Make Things*. For information regarding submission guidelines visit www.c2c-home.org.

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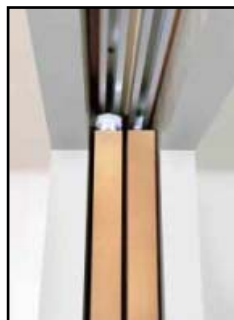
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Dates & Events

of Multiple Dimensions Competition

Deadline: September 3, 2004

Judged by Steven Holl, this competition is looking for the design of a small house of 250 square meters which can act as an experimental probe into an architecture of more than four dimensions. The experiential phenomena of the house will be a crucial factor. The house should also be inhabitable. Materials, from molecular aspects to geometric properties, will be important, as will space and time. The house will act like a "thought experiment." For more information about submitting, visit www.japan-architect.co.jp.

Emerging Professionals Guest House/Studio Design Competition

Registration Deadline: October 1, 2004

Submission Deadline: October 18, 2004

This competition is a special project intended to encourage and recognize the design skills of emerging architectural professionals. The award-winning projects will receive recognition and cash awards. Finalists will become part of a case study demonstrating cooperative projects between industry, schools, and professional practice. This competition is a partnership between EPICconnection.com, the AIA National Housing Committee, and the sponsor, the Whirlpool Corporation. For information and submission requirements, visit www.epiconnection.org.

Zhu Jia Jiao Competition

Registration Deadline: May 30–August 30, 2004

Submission Deadline: September 30, 2004

International Open Competition for new Jiangnan Canal Town. Organized by the City of Shanghai Qingpu District Government, this competition hopes to inspire a new manner of urbanization, one that is neither urbanism nor suburbanism; it intends to provoke a lasting dialogue between Chinese city and contemporary architecture. For more information and submission requirements, visit www.shzjj.com

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June 17

Takashi Yamaguchi

principal of Takashi Yamaguchi
and Associates, Osaka, Japan

June 21

Building Green

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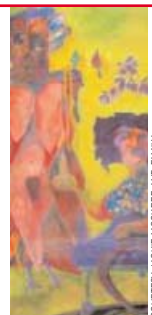
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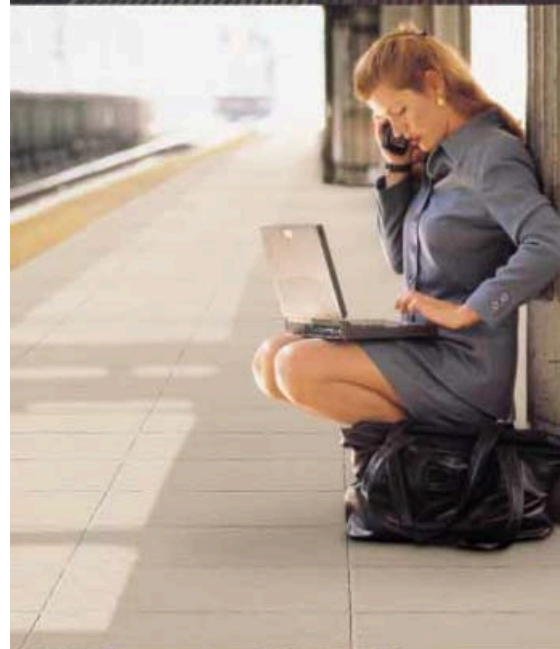
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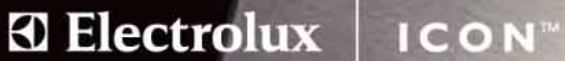
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For and about the new generation of architects

archrecord2 FOR THE EMERGING ARCHITECT

This month in **archrecord2** we look at the winners of the American Institute of Architect's 2004 Young Architects Award and examine a project in L.A.'s Skid Row that is high on design and low in cost. In **Design**, get to know the architects, their leadership in design, and their service to the profession. In **Work**, architect Chantal Aquin builds a project with modest financing but bold inventiveness. Learn more by visiting architecturalrecord.com/archrecord2.

DESIGN

A great start in architectural careers

This year, the American Institute of Architects awarded five architects the 2004 Young Architects Award. Recipients of this award, regardless of age, are at an early stage of their careers, and their exceptional leadership in design, education, and/or service to the profession are all taken into consideration when they are chosen. The five individuals honored this year each display characteristics that show a promising future in architecture. The winners will be presented with their awards at the AIA 2004 National Convention and Design Exposition in Chicago this month.

Licensed to practice architecture in the states of Virginia and Maryland, architect David Jameson, AIA, has made a reputation for himself as a remarkable and imaginative residential architect. With the formation of David Jameson Architect six years ago, the Virginia Tech graduate has had the opportunity to design projects at both small and large scales. His ability to juxtapose texture, shapes, materials, and colors have become his trademark. With conservative Washington, D.C., as the backdrop for many of his projects, he has been able to successfully create modern homes in a traditional setting. The architect's work has garnered attention from regional and national magazines and has been featured on several programs on Home & Garden Television. His designs have also been recognized by more than 35 local, state, and national awards.

The methodology of Janis LaDouceur, AIA, has brought her and her Minneapolis-based firm, Barbour/LaDouceur Design Group, much acclaim. LaDouceur believes that the art of architecture is to tell a story, and she approaches each project with this philosophy. Many of her community-based projects—cultural centers, memorials, and museums—reveal her desire to incorporate her clients' culture into the design. Attention to such detail can be seen in LaDouceur's design of projects like the proposed Ojibwe Cultural Center and the Richard I. Bong World War II Heritage Center in Superior, Wisconsin. Another project, the Science House at the Science Museum of Minnesota [RECORD, August 2003, page 170], is an addition whose form was



1

David Jameson Architect

Examples of David Jameson's award-winning residential designs: (1) Church Street Residence, Washington, D.C.; (2) Push Pull House, Chevy Chase, Md.; (3) Model of Maison Bois Chamois, Suwannee, Fla.



2



3

intended to recall the nearby river tugboats. As one of the first outdoor science installations in the nation, the building, which will serve as a greenhouse, a laboratory, and classroom space, will also be an exhibit in itself, as it produces more energy through solar strategies than it uses.

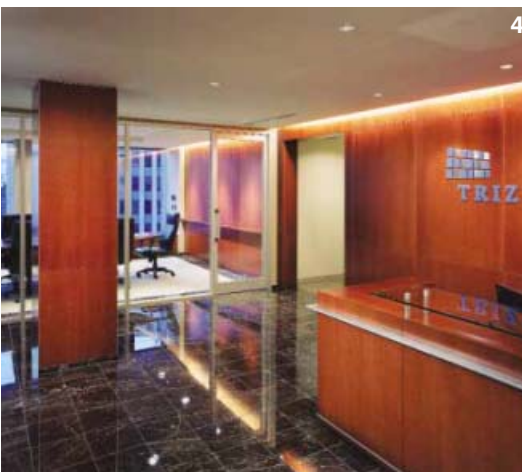
Architect Kevin Sneed, AIA, is a respected figure in the AIA Northern Virginia (NOVA) chapter, and his service and contributions to the chapter have become invaluable. The architect has taken part in numerous NOVA committees and also served on the board in several positions: treasurer, president, and the 2003 president. As a founding member of the NOVA Young Architects Committee, he developed programs that are now used as models for other AIA chapters. Currently the director of architecture at OTJ Architects in Washington, D.C., Sneed's leadership has created bonds with related industries and with surrounding AIA chapters in Virginia and Maryland. His enthusiasm for design can be seen in ventures such as his promotion of the profession at elementary schools and his aid in the organization of Virginia Architecture Week. When Sneed worked with BBGM Architects/Interiors, his client list included Chevy Chase Bank and the U.S. Marine Corps.

Donna Kacmar, AIA, is balancing a career that involves design, teaching, and community service. As founder of architect works in Houston, Texas, she has designed residential and commercial projects that have been widely published and received numerous awards. Kacmar is assistant professor at the Gerald D. Hines College of Architecture at the University of Houston, where she is also the Level I Graduate Design Coordinator, and for the past eight years she has taught at the university's Summer Discovery Program for high school students. She also has a long and varied history in community-based service activities. Since 1998, Kacmar has worked with the Avenue Community Development Corporation, a nonprofit, low-income-housing-development corporation for rebuilding Houston's inner-city neighborhoods.

After graduating from Syracuse University with a B.Arch. degree, John Burse, AIA, moved to St. Louis and now promotes urban renewal in his own community. A senior associate with



Barbour/LaDouceur Design Group
Projects include: (1) The Environmental Experiment Center "Science House," Minneapolis; (2) The Richard I. Bong WW II Heritage Center, Superior, Wisconsin, Ill.; (3) Battle Point Ojibwe Cultural Education Center, Leech Lake, Minn.



BBGM Architects/Interiors
Examples of Kevin Sneed's interior designs: (4) Trizec Regional Headquarters, Washington, D.C.; (5) PHH Arval/Highland Office, Baltimore County, Md.



architect works

Donna Kacmar's recent design work: (6) Round Valley Texas Office Building + Garage,

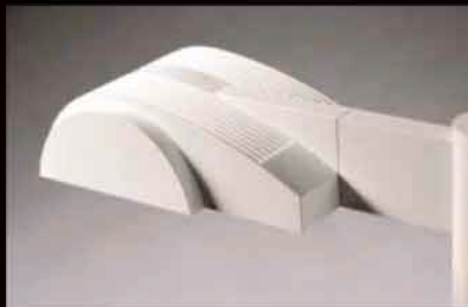
Belleaire, Tex.; (7) Woods High School's planned Westview Campus, Houston (with Natalye Appel and Associates).

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Mackey Mitchell Associates
John Burse combines a personal passion for revitalizing the city with urban planning: (1) Future vision for the Old North St. Louis; (2) An example of Burse's award-winning watercolors.



Mackey Mitchell, Burse's work focuses on urban design, using this skill not only to fulfill his work but also to fulfill his passion—revitalizing the Old North St. Louis community, a once-bustling neighborhood. The architect has gone beyond what one might expect in this planning project. Using his personal time to create drawings and renderings of what he foresees for this area, Burse also holds workshops and meets with residents of the neighborhood to explain his vision. His zeal for the project has been contagious, as he has prompted local leaders, developers, and lenders to support this effort to make the area a livable community once again. Burse's design and planning skills have also been essential to his work on other projects, including the Concordia Seminary, the Central Institute for the Deaf, and master plans for international resort communities. *Randi Greenberg*

For more projects and photos of these award-winning architects, go to architecturalrecord.com/archrecord2

WORK

High design hits the spot

When Los Angeles-based architect Chantal Aquin was asked to design a new service center for the Skid Row Housing Trust, she was faced not only with a low budget, consisting entirely of a HUD grant, but limited practical experience as well. Not willing to sacrifice design, Aquin turned these limitations into assets, mixing resourcefulness with ingenuity—and a lot of plain old hard work.

Jim Bonar, director of the Skid Row Housing Trust, an organization that provides permanent housing and supportive services for residents of Los Angeles's Skid Row neighborhood, wanted something different for its new Service Spot. Located on the ground floor of one of the organization's single-resident-occupant hotels, Service Spot was to be a "user-friendly" center that would offer case management, support-group meetings, educational opportunities, and service referrals.

PHOTOGRAPHY: © COURTESY JOHN BURSE (THIS PAGE); LUCY GONZALES (OPPOSITE)





The Service Spot provides a fully functional and well-designed service center for the residents of Skid Row.

Having just completed work on another nonprofit project with Aquin, Bonar knew she would be the right person to turn Service Spot into that “something different” he was looking for.

“When it comes to designing for the homeless or mentally ill, there’s typically a very distinct separation between public and private spaces,” explains Aquin. “There is a sense of fear there, since it’s sometimes difficult to anticipate their behavior—so many of these centers are designed with bar-

riers. Instead, Jim wanted users to feel a sense of ownership of these spaces. We also wanted the residents to feel as though they were given something precious, not just services contained within blank walls.”

To stretch her limited budget as far as it could go, Aquin, just a couple of years out of SCI-Arc, enlisted help from current students as well as fellow alum Rocio Romero and former SCI-Arc instructor Randall Wilson.

Wilson led an intensive summer

studio in which students designed and built the seating, workstations, filing trolleys, and cabinets for the refurbished storefront. Though Bonar was skeptical of their ability to furnish the space, students received material donations from Home Depot, Anderson Plywood, and Häfele and were able to outfit the entire 2,000-square-foot space.

The reception area is designed as a light box visible from the street to welcome visitors. Inside, the standard syntax of public-to-private space confronted by users of most public service agencies is twisted to create an interweaving of private with public spaces—allowing users to walk freely from one activity to another with no physical obstacles. Transparent and translucent materials allow users to see the activities in which they will ultimately participate with no fears of being engulfed by authorities or institutions. *Josephine Minutillo*

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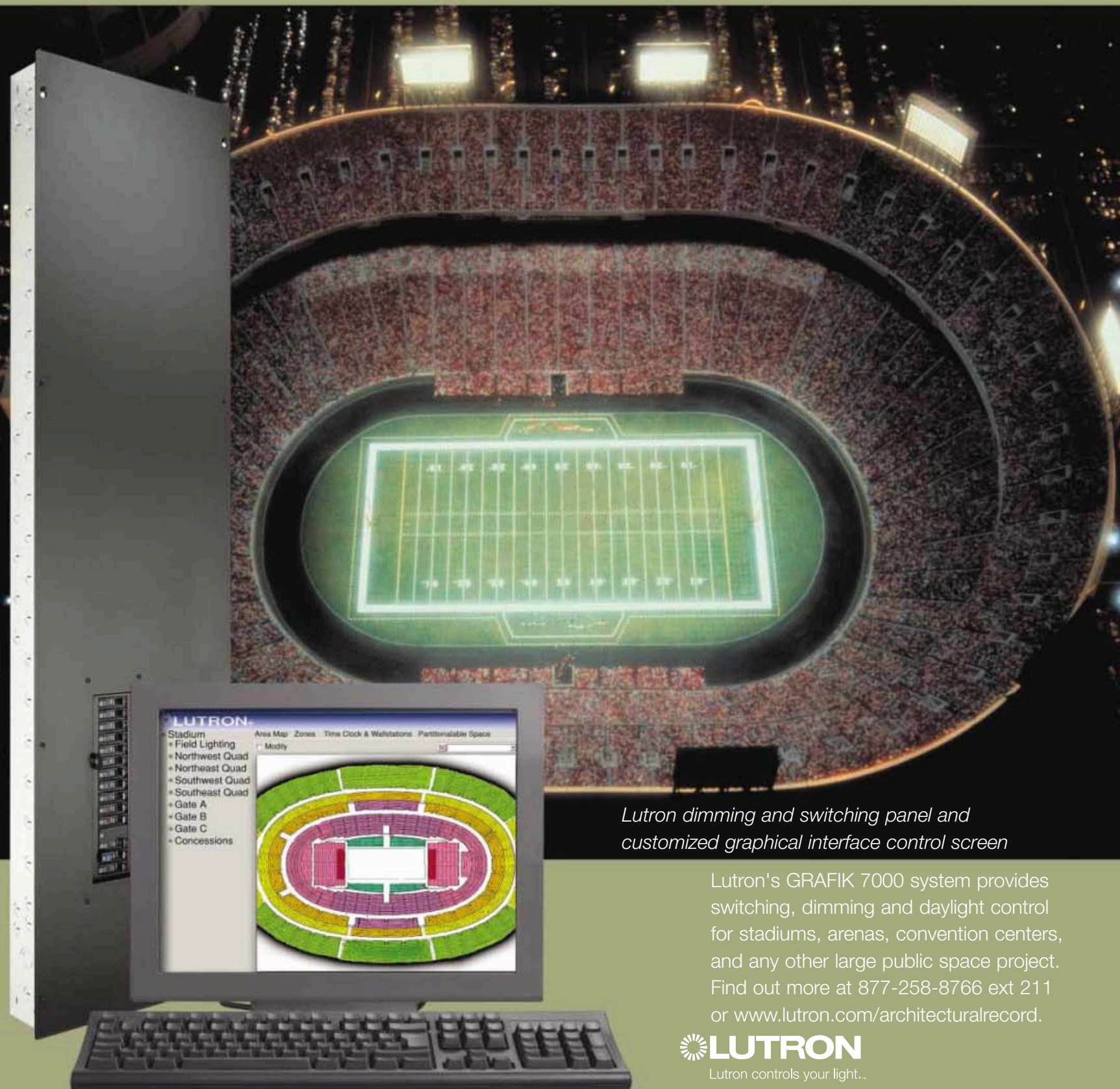
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Hang on to your old cameras: For some purposes, film is still better than digital

Practice Matters

By Charles Linn, FAIA

Today, practically everybody uses digital technology to make and store photographic images. Some recordings of a scene are made on the spot, using digital cameras; others are made indirectly by scanning existing photographs or transparencies that were made in the old-fashioned way, using film.

The advantages of photographs made with digital cameras are obvious. They can be previewed on the spot. Desktop printers can make copies that are as good as photographs for some purposes. One doesn't need to buy film or have it processed by a lab.

Digital images have other advantages: They can be e-mailed instantly and inserted into documents in seconds. Adobe's Photoshop can correct color to a certain extent and add a host of special effects. A whole archive of photos can be stored on a few CDs or a single hard drive and sorted and indexed using image-management software. Digital storage is theoretically permanent, although CDs and disks can get damaged and hard drives do crash.

The advantages of digital are so overwhelming, and the new equipment is so easy to use, that some architects have begun documenting their finished projects digitally and given up using film and professional photographers entirely. But, there are still times when conventional medium- and large-format prints or transparencies are better than images made with point-and-shoot digital cameras, particularly when large prints are needed or

the photos will be viewed up close. Professional-grade, high-resolution digital cameras that accept interchangeable lenses currently cost from \$1,500 to \$15,000.

At least for the moment, there are some applications where film cannot be replaced by digital, such as when long exposures are needed for night scenes. And digital cameras that can correct perspective are still relatively rare. So, don't take the phone number of your trusty architectural photographer out of your Rolodex yet, and hang on to your old camera. True, some professional photographers are switching to digital for some jobs, but most are sticking to film.

"It doesn't matter if you are using a file from a digital camera or something that was scanned. It's the quality of what came out of the camera that determines the quality of the final product," says New York photographer Elliott Kaufman. "Photoshop can do amazing things, but one thing it can't do is make a mediocre image from *any* source look like an image from a four-by-five," he says, referring to the large negatives and transparencies still favored by many. (See the last page of this article for an illustration of three different film formats.) Kaufman still shoots exclusively with film. So when should an architect choose film over digital? It helps to get an understanding of why the two are so different.

Digital or film?

Digital and film cameras record patterns of light in entirely different



Which do you want in your portfolio? Pixels are starting to show in the enlargement of the digital picture. The 35mm shot is grainy and less sharp. The detail of the medium-format photo is clearly the best of the three.

Practice Matters

ways. When the chip inside a digital camera is momentarily exposed to a burst of light, millions of bits of information are gathered and recorded as a grid of minute colored squares called pixels. Although some digital cameras allow the user to preview such an image, it doesn't really exist in physical form until it is printed out. The more information captured by the chip, measured in megapixels, the better the image will be.

The film in a camera is analogous to the chip. When light is focused on it, microscopic crystals of silver halide embedded in the film are altered in such a way that a representation of the image is left on it. This becomes fixed during development. The type of film selected by a photographer certainly affects the sharpness of a photograph, as does the physical size of the film. The larger the film,

the more "information" can be captured in a single exposure. And, obviously, large negatives do not have to be enlarged as much as small negatives to get a usable picture. Whether one is talking about digital or film, the quality of the camera's lens and the stability of the camera during an exposure

ART DIRECTORS AND THOSE WHO MANAGE AWARDS PROGRAMS STILL RECOMMEND PHOTOS MADE THE OLD-FASHIONED WAY.

also influence the sharpness of the images they make.

Some photographers believe that because people don't naturally see the world rendered in pixels, film will always capture an image in a more realistic manner than a digital camera. When enlarged, the colored squares that make up a digital photograph can be seen, just as the grainy appearance of

the halide crystals on the film become visible. New York photographer David Sundberg, who often uses a digital camera says, "With digital there is somehow a different overall look or feel to the image. There is often what I would describe as a colder, harder quality to the photograph."

As a point of comparison, some say five-megapixel cameras, which currently cost about \$500 and up, can produce images with

a resolution that closely approximates one made by a professional-quality 35mm camera. That is, they can both make acceptable 8-by-10-inch prints. But when the images are enlarged much beyond this point, or especially if they must be cropped and magnified even more, either grain or pixels will become noticeable. Does it really matter? That depends on what the

image will be used for.

Books and magazines

People supplying images for publication in magazines or books should still expect to supply either large format transparencies, or prints made from large-format negatives, says Douglas Curran, associate editor at Rizzoli International Publications: "I encourage all of our authors and photographers to supply us with transparencies or flat art, rather than digital art, whenever possible. Consistently, the final printed image, when made from a transparency, is stronger, more vibrant and accurate in terms of representing the original than a printed image as made from digital art. I am told that this will change, but to date, I have not seen any evidence that this change is near."

Many art directors prefer to work with original transparencies so that they can see and match the final color to the original color proof supplied by their printers.

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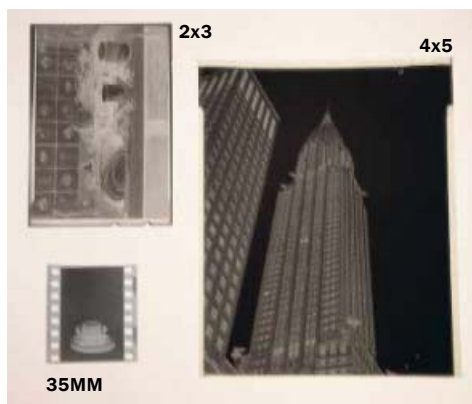
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Practice Matters



Most photographers agree that even the best digital cameras can't match the sharpness of the 4-by-5-inch negative.

Several art directors say that in recent years they have been plagued by contributors who submit digital photography that is unusable because images were scanned at the wrong resolution or supplied on damaged CDs. These problems can be avoided when film originals are

submitted instead of digital files.

Another situation where film seems to have an edge over digital is in awards-program submittals. National AIA Awards director Robin Lee says that recently she's seen many promising award entries fail because their binders relied on poor quality digital printouts instead of large color prints or

slides. She says, "Jurors have been simply appalled at the low quality of some of the submissions that have relied on digital prints." Lee still recommends slides for their brilliant color, sharpness, and because they are easy for groups to view. "Slides are an important

form of presentation that juries consistently appreciate."

What about PowerPoint?

Almost any mention of slides will bring up one application where digital photography has been quite successful in superceding film, and that is when they are used with presentation software like Microsoft's PowerPoint and Apple's new Keynote. Either digital images, or for that mat-

rate color and sharpness are crucial, go with a slide.

More changes to come

There is no doubt that high-megapixel digital cameras are going to keep getting cheaper and better. One day a column in this magazine may report that in terms of color and sharpness, they truly *have* superceded medium- or large-format film, but it will be awhile before this

ART DIRECTORS STILL PREFER ORIGINAL FILM BECAUSE ITS COLOR CAN BE CHECKED AGAINST COLOR PROOFS.

ter digitized slides, can be dropped into presentations in seconds.

The clarity of the image is probably not as important as it is for other applications, because the amount of resolution that digital projectors are currently able to achieve is quite modest. But the images are usually viewed at a distance, so sharpness doesn't matter as much. Still, if you are doing a presentation where accu-

kind of equipment is affordable. Until then, architects should carefully consider whether digital photography is sufficient for all of their purposes, or whether they'd be better off shooting a few slides of each project with their old camera or, for the big jobs, hire a photographer. Film isn't obsolete yet. ■

RECORD editor Jane F. Kolleeny contributed to this article.

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A new event, the Universal Forum of Cultures, helps Barcelona transform an ailing district

Correspondent's File

By David Cohn

DEPARTMENTS

The latest recipe for Barcelona urban design, as seen at the site of this summer's Universal Forum of Cultures, a UNESCO-backed international festival, goes something like this: Take the last stretch of unrecovered seafront on the north-eastern limits of the city—a zone blighted with a sewage treatment plant, a power plant, a garbage incinerator, and decades of pollution—clean it up, and upgrade the dirty infrastructures with state-of-the-art, environmentally friendly facilities. Span the now-odorless sewage plant with a 27-acre public Esplanade that connects the city to new waterfront recreational facilities, and crown it with a monumental photovoltaic pergola to underscore the environmental theme. Stir in a landmark auditorium and exhibition hall designed by Jacques Herzog and Pierre de

Meuron, hotels, and a convention center, and set the whole thing to boil with the Forum, invented specifically for the occasion, with debates, exhibitions, performances, and hundreds of other events that attract millions of visitors to the site from May through September. The result? Voilà! A major eyesore and environmental disaster area has been transformed into a new motor of future urban development, and a model for the principles of sustainable design that the Forum advocates.

Opening in May and running until September 26, the Forum differs from traditional World's Fairs by offering a meeting of cultures rather than nations, explains Mayor Joan Clos. It proposes a platform of debate in which the problems of environmentally sound economic growth, cultural understanding, and world conflict are treated as interdependent issues, a debate shaped by Barcelona's particular perspec-



tive as a center of regional cultural identity and economic power within the mosaic of European city regions. Organizers expect five million visitors.

The urban operation of the Forum occupies three landfills reclaimed from the sea: a marine wetlands artificially created for a marine branch of the Barcelona Zoo, still on the drawing boards; the central platform of the Esplanade;

and to the northeast, a coastal park with a new beach, designed by Madrid architects Iñaki Ábalos and Juan Herreros, which features artificial hills that buffer the impact of the power plant, incinerator, and a new garbage sorting and recycling facility.

The major buildings of the Forum are confined to the landward side of the operation. Here, the city has built a convention center, hotel, and office building designed by local

David Cohn is RECORD's Madrid-based international correspondent.



The plan for the Cultural Forum (above) includes redeveloping a formerly abandoned stretch with an esplanade, convention center, auditorium, exhibition hall, and more. The exhibition hall (left), called the Forum Building, by Herzog & de Meuron, features a massive horizontal slab in the form of an equilateral triangle measuring nearly 600 feet to a side.

IMAGES: COURTESY INFRASTRUCTURES 2004 (TOP); HERZOG & DE MEURON (BOTTOM RIGHT) PHOTOGRAPHY: © ARQUITECTURA VIVA/ALEJO BAGUÉ (BOTTOM LEFT)

Correspondent's File

architect Josep Lluís Mateo, which features a 120,000-square-foot exhibition hall, and the Forum Building, which boasts a 3,200-seat auditorium and 50,000 square feet of exhibition space.

In architectural terms, the Forum is conceived as a territory of activities rather than a conventional urban development. Mateo, who participated in the early sessions of urban design, together with Barcelona chief planner Josep Anton Acebillo, and architects Enric Miralles and Eduardo Bru, among others, describes the early concept for the project as a "magmatic territory that spills across the site."

This idea of a lavalike extrusion is present in the irregular form of the Esplanade, designed by architects Elías Torres and J.A. Martínez-Lapeña, which seems to spread out from the Diagonal (a major cultural thoroughfare) arching over the coastal highway and the sewage treatment plant to end at the sea in a series of escarpments up to 60 feet high. With its surface finished in a patchwork of multicolored asphalt and lawns crisscrossed with expansion joints, the Esplanade establishes the artificial ground plane or geography on which the events of the Forum take place. It will also contain outdoor restaurants and cafés and host future activities such as flea markets, fairs, and public festivals.

To the southeast, an area of artificial dunes and amphitheaters designed by the London-based Alejandro Zaera brings the platform down to the water, where Barcelona architect Beth Galí has designed a paved bathing area, like a swimming pool open to the sea. While crowning the Esplanade on a high point jutting into the Mediterranean is the expressive form of the photovoltaic pergola, the size of a football field, also designed by Torres and Martínez-Lapeña, which produces 1.3 megawatts of electricity, roughly the consumption of 1,000 Spanish

homes. As seen from the water, the Esplanade and pergola, which reaches a height of 200 feet, take on the proportions of an artificial geographic event that marks the northeastern limits of the city, mirroring at a smaller scale the mount of Montjuïc that frames Barcelona to the southwest. The Esplanade also marks a departure from the usually staid and conservative Modernism of Barcelona architecture, as seen, for example, in the 1992 Olympic Village [see *RECORD*, August 1992, page 100], and an opening toward a more earthy, ludic, and dynamic use of form, closer in spirit to Antonio Gaudí and the Catalan artist Joan Miró.

Herzog & de Meuron's Forum Building is the architectural star of the show, a massive horizontal slab in the form of an equilateral triangle measuring nearly 600 feet to a side. Due to its size, the architects have conceived the design not in the traditional terms of composing facades or volumes, but rather as if the building formed part of the Forum's peculiar artificial landscape. The upper mass containing the hall seems to float over the Esplanade to create an unusual shaded plaza, with spectacular cantilevers on all three sides. Its supports and ground-floor enclosures are hidden behind mirrored glass that dissolves in the reflected light of the surrounding plaza. The brilliant contrasts of reflected light and shadow are enhanced by the dark metal ceiling tiles, conceived as a watery surface covered with bubbles, which draw dappled light deep into the space. The auditorium is also partly finished in these liquid tiles; it spills down from the upper mass through one of the plaza's glass volumes to end below grade. A plane of water literally covers the roof, and water trickles down to the plaza through crevices opened in the volume, while the jagged mirrored windows resemble rivulets of spilling water. The rough, sprayed cement facades,



Jean Nouvel's Agbar Tower is rising near the Forum site in Barcelona. At 474 feet, it is another example of the city's aggressive urbanism.

painted Yves Klein blue, have disappointed some for their apparent cheapness, but the detailing is actually very fine, and the volume reads like a bright, sophisticated cartoon.

Ascan Mergenthaler, the partner in charge of the project for the firm, comments, "We used the water theme to bring the Mediterranean a little closer. The ceiling had to be attractive, lively, and playful, not this oppressive plane hanging over you. The bubble patterns are computer-generated, and they have direction, like the sea, flowing around the cores."

The Forum was master planned by Barcelona Regional, a public authority which oversees strategic long-term planning for the city and its surroundings. Acebillo, who is its director, explains, "The Department of Urbanism deals with the daily problems of the city. This leaves them little margin for speculation about the future. What we do is this kind of forward vision." Building on the experience of the 1992 Olympics, when planners led by Oriol Bohigas used the games to push for major urban improvements, Barcelona Regional has



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Correspondent's File

developed into a remarkable planning instrument, producing comprehensive, integrated programs that cover all aspects of urban and economic development, and that use local and specific actions to achieve general goals.

The Forum, for example, is part of a global strategy to draw future commercial development to the eastern half of the city, away from the prosperous but saturated western districts, and to promote the growth of new high-tech businesses. The Forum stands at the far edge of this area, known as BCN and comprising 120 blocks of underused industrially zoned land that has been updated with the latest communications services and seeded with investment incentives. To reach the Forum, planners extended the Diagonal to the site, effectively opening the area for development. At the head of the new Diagonal,



The Forum's monumental photovoltaic pergola will have an array the size of a football field.

Jean Nouvel's spectacular Agbar Tower for the Barcelona water authority will open this winter, "a landmark that locates the operation in the public mind," explains Acebillo. Nearby projects include a cinemaplex and plaza by Zaha Hadid, a city museum by Oriol Bohigas, and a district city hall by Madrid architect Federico Soriano.

Farther to the north, a third node of development will focus on the upcoming high-speed-train station at Sagrera. "Almost all our projects originate in infrastructural problems, to which we add an urban dimension," Acebillo concludes. In the immediate area of the Forum, the poor residential neighborhood of La Mina will be restructured with new

housing, public spaces, and municipal services, and a technical university is being planned to encourage research and development in new technologies.

Barcelona Regional is also overseeing the restructuring of what Acebillo calls the city's "logistical" services located on its western flank. Plans include an expanded



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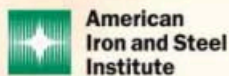
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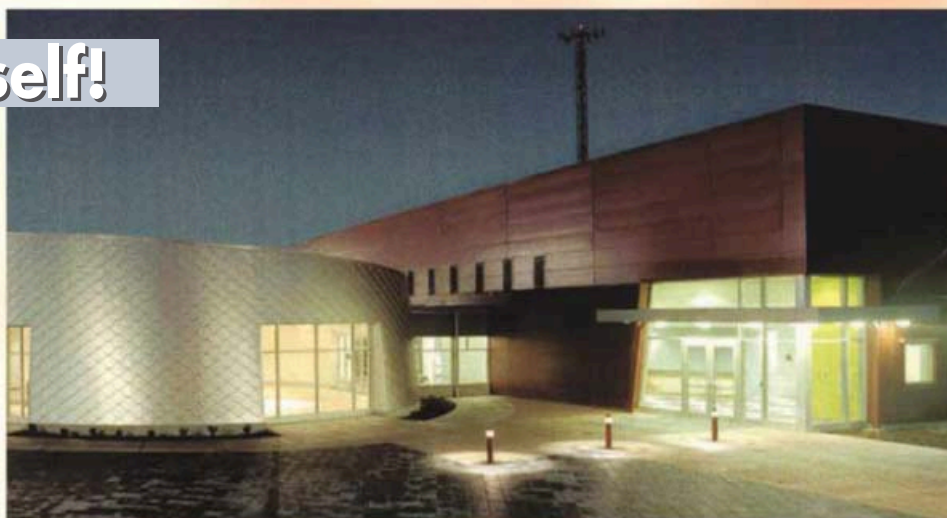
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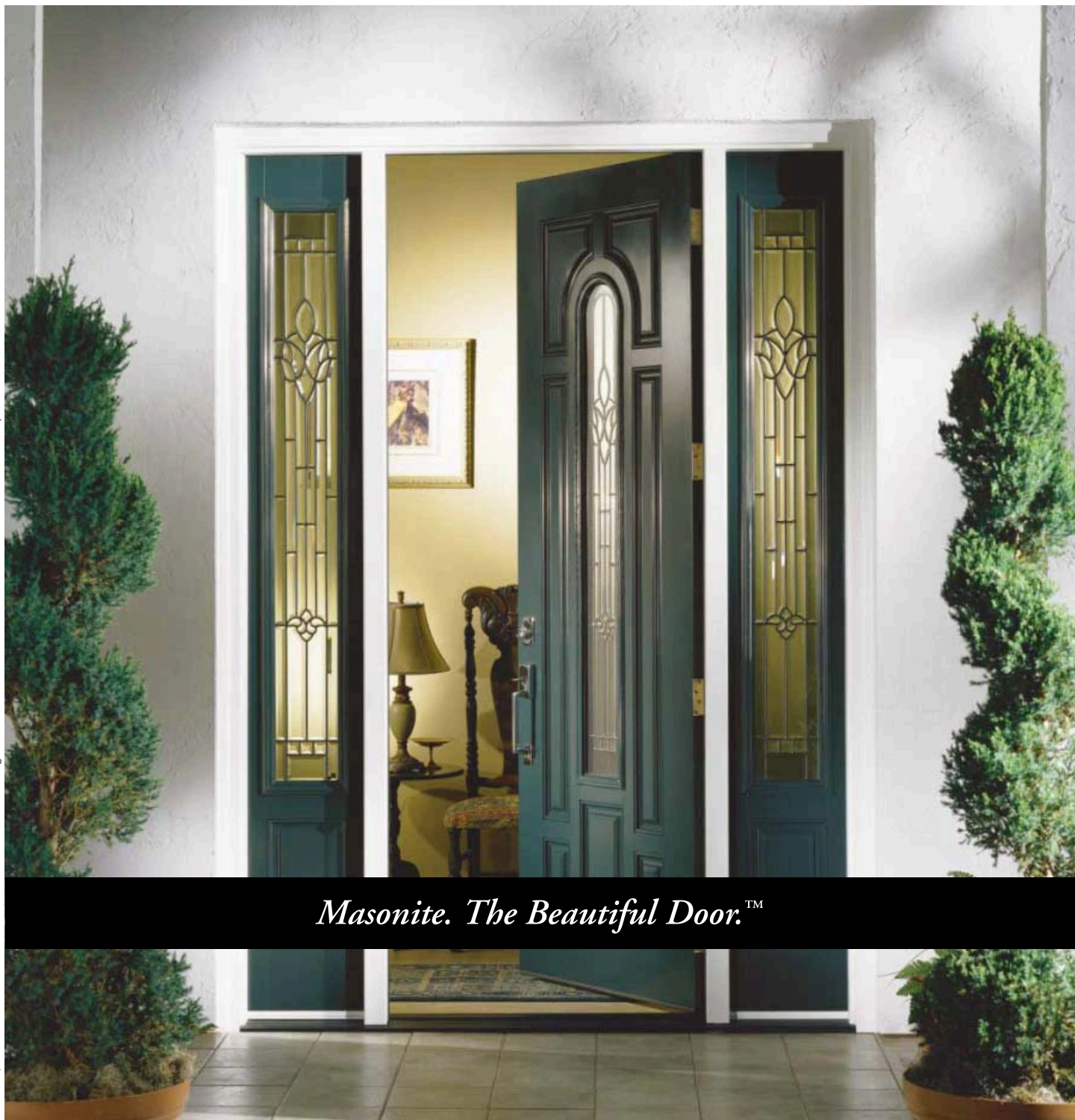
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Convention center, hotel, and office building designed by Josep Lluís Mateo.

industrial park associated with the commercial port; Ricardo Bofill's expansion of the airport, with connections to the high-speed train; a second Trade Fair campus designed by Toyo Ito; and a City of Justice being built by David Chipperfield. This area, located outside the city limits in Hospitalet, has attracted commercial developments, including the City Metropolitana office park by

Nouvel, the District 38 mixed-use development by the team of Arata Isozaki and Alejandro Zaera, and a hotel by Richard Rogers.

Barcelona is not the only city in Spain with big ideas. In Valencia, construction will finish this fall on Santiago Calatrava's City of the Arts and Sciences, his most spectacular collection of buildings to date, including the soaring, skeletal

Science Museum; a planetarium in the shape of an eye, complete with a movable "eyelid" brise-soleil; and a reptilian opera hall with a swooping cantilevered tail. In Bilbao, Zaha Hadid has been tapped to master plan a 150-acre urban district on the riverfront in Zorrozaurre. Workers have finished excavating through solid rock for Peter Eisenman's City of Culture in Santiago de Compostela, a multi-building complex largely buried under a hill. In Madrid, additions to three museums forming the city's "cultural axis" are nearing completion: the Reina Sofia Museum of Contemporary Art, by Jean Nouvel; the Prado, by Rafael Mone; and the Museum Thyssen-Bornemisza, by the Barcelona team of BOPBAA, Manuel Baquero Briz, and Robert Brufau Niubo. A fourth museum, a Madrid branch of the Caixa Forum Foundation, is being built by Herzog & de Meuron, and Álvaro Siza heads a team that is restructuring the streets and public spaces of the axis. All across Spain, public authori-

ties are using innovative architecture and planning to bring distinction and vibrancy to the public realm, visible testimony to their commitment to cultural and material progress.

But few can rival Barcelona for the scope and ambition of its urban initiatives. The development of the city is historically linked to major international events like the Forum: the Universal Exposition of 1888, the International Exposition of 1929, and the 1992 Olympics. Pascual Maragall, the city's former mayor and current president of Catalonia, once described Barcelona as "a capital without a country," and the city appears to seek in these periodic feats of self-definition and promotion to compensate for the lack of the cultural and economic advantages of centrality that other European capitals take for granted. If this diagnosis is correct, it has produced a powerful instrument for bringing vibrancy and innovation to the public realm, and made Barcelona a model for other capitals worldwide. ■

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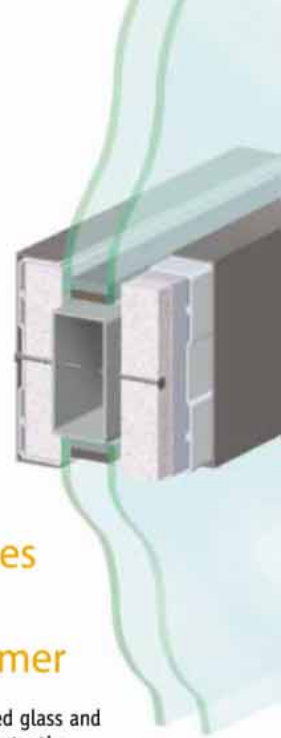
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In a city whose political terrain is treacherous, a Gehry project comes up against a wall

Critique

By Michael Sorkin

In early May, Arnold Schwarzenegger made his first official trip abroad. Among his stops were a visit to troops injured in Iraq recovering at a hospital in Germany, a meeting with King Abdullah in Amman, and a ground breaking in Jerusalem with a raft of government officials. This last was for a Museum of Tolerance, a franchise of the existing Museum of Tolerance in Los Angeles, which combines exhibitions on the Holocaust with more diffuse installations designed to teach principles of tolerance in general. Schwarzenegger has been a generous supporter of the L.A. museum, which is known for its high-tech, interactive exhibition technology. And the museum has returned the favor, rising to Arnold's defense when he was tarred with the Nazi past of his father.

The Jerusalem branch of the organization has been designed by Frank Gehry and may cost something north of \$200 million to build. It will include not simply a museum but a congress hall for meetings on tolerance, a movie theater for films about tolerance, a library of tolerance, and a restaurant. The centerpiece of the project is its Grand Hall, a titanium confection with a turbinelike plan that Gehry compares, in spirit, to a mosque. The museum, however, will differ from its L.A. counterpart in not including its central element: displays devoted to the Holocaust. Although such exhibits were originally intended, Yad Vashem, Jerusalem's historic

Holocaust memorial, museum, and archive, objected to an invasion of its proprietary territory.

The Museum of Tolerance arrives with high hopes and the strong support of the right-wing Likud government, most prominently Ehud Olmert, former mayor of Jerusalem. The reasons exceed tolerance; the museum's sponsors avow that it "is forecast to become a stimulant for economic, cultural, and educational growth, as well as a boost to tourism resources." Indeed, according to Rabbi Marvin Hier, director of the Simon Wiesenthal Center, the umbrella organization for the Los Angeles museum, with the comple-

its dramatic economic impact—to be almost entirely the outcome of flamboyant architecture, the actual content of the various dream projects seemingly of secondary importance. The easy slide from an art museum to a museum of mass murder is thus accommodated by foregrounding the envelope, emphasizing its meanings over those within. Presumably those millions from around the world will come for the uplift of Gehry's design, not the horrors depicted inside.

The project's reception in Israel has been, to put it mildly, mixed. As the distinguished historian and former deputy mayor of Jerusalem Meron Benvenisti wrote in the Israeli

object. There's no need to waste words on the absurdity of a Museum of Tolerance planted on part of an ancient Muslim cemetery, some of which has long since been turned into a parking lot and will now be topped by spaces in which people are meant to learn about tolerance, mutual respect, and religious coexistence."

Benvenisti's skepticism is echoed by Esther Zandberg, the architecture critic for *Ha'aretz*, who wonders why Kikar Hatulot, a "highly popular urban plaza" that currently supports an ethnic market and a range of informal social activities on the site, is being eliminated for the building. Zandberg takes special umbrage at the Wiesenthal Center's refusal to make plans and images of the project public—despite their having been published in 2002 in the Japanese magazine *GA*—an embargo she claims is designed to forestall opposition and humor potential funding sources. Zandberg also shares Benvenisti's sense of the irony of erecting a "temple of tolerance" in a city so mired in fanaticism.

What better place, it might be argued, for a museum of tolerance? Certainly, the architectural component of Benvenisti's argument is dubious, a matter of taste, especially given the stultifying monotony of so much of modern Jerusalem. Indeed, there was a faction in Bilbao that took the same line about the Guggenheim's aesthetic impropriety. But the center of Benvenisti's objection is telling: Can this building have anything to do with promoting understanding between Israelis and Palestinians? That the answer might



Gehry's design for the Museum of Tolerance features a twisting Grand Hall.

tion of the Israeli project, "the hotels and streets of Jerusalem will be bustling once more with millions of visitors from around the world, many of whom will come especially to see our center as they have come to see the Gehry-designed Guggenheim Museum in Bilbao, Spain."

This so-called Bilbao effect has captured the imagination of municipal authorities around the globe, who understand the phenomenon—with

daily *Ha'aretz*: "It is difficult to imagine a project so hallucinatory, so irrelevant, so foreign, so megalomaniac as the Museum of Tolerance. The mere attempt to stick the term *tolerance* to a building so intolerant to its surroundings is ridiculous. Others have already referred to the extravagant arrogance expressed in the geometric forms that can't be any more dissonant to the environment in which it is planned to put this alien

Contributing editor Michael Sorkin is the head of the urban planning program at The City College of New York.

Critique

be "no" was dramatically reinforced for me during a trip to Jerusalem in April, when I visited the Israeli "security fence" where it passes through the Abu Dis neighborhood, less than a mile from the site of the new museum. Here was intolerance materialized, a 30-foot-high wall of concrete barricading Palestinians from the center of the city, from jobs, from friends and family, from medical care, and enclosing Israeli Jerusalem in a terrible illusion of security.

The two expensive constructions cannot be separated: Their conflict is clear. A community cannot simultaneously repress its neighbor and proclaim its love of tolerance without hypocrisy. By identifying tolerance with an enormous building with a vaguely defined program, tolerance becomes an object of consumption rather than an act of conscience. More, the idea of constructing a beautiful center in which

people—those invited by the institution—can discuss their differences short-circuits obvious matters of the inequality between those building it and those with whom they might have discussions, furthering the imbalance of power and rights that fuel the conflict. As Herbert Marcuse observed, tolerance can also repress, an effect literalized in the substitution of a controlled environment for an existing public place, a place of both accidental and elective encounters rather than the scene of purely orchestrated and mediated events.

This museum, above all, is a rhetorical project in which a building is substituted for the harder processes of bridge-building, for the myriad acts of fairness that characterize a tolerant society. Gehry's building, in particular, with its familiar fragmentary style, uncomfortably evokes the "deconstruction" of Yasser Arafat's headquarters in

Ramallah into a pile of rubble by Israeli security forces. The painful contrast between these two places makes the absurdity of the new construction (we build shining monuments to our sense of tolerance while we blast your institutions to bits) so much more profound.

Co-opting tolerance?

But my questions are for the architect. Will an extravagant building advance the cause of tolerance or simply stoke resentments? Is any sectarian attempt to co-opt the idea of tolerance for its political armamentarium worth supporting in an atmosphere as riven as Jerusalem's? What is the real purpose of this project? If it is to try to heat up the Bilbao effect with a museum of genocide, is this really a project an architect of conscience should participate in? Does Gehry think that describing the central hall of the complex as being "like a mosque" will really establish the tolerant credentials of this project?

Although Gehry is generally

gnomic in his political utterances, an interview in GA revealed that he is not altogether unaware of the political geography of this undertaking. He speaks of his satisfaction that the project was moved from its original site in a more peripheral location because it was opposite a proposed Israeli jail. The new site is opposite a courthouse, a distinction probably lost on most Palestinians who pass through the judicial system, the same Palestinians who will be prevented by the wall—their permanent jail—from visiting the Museum of Tolerance erected to stimulate friendly discourses of difference.

Eminence has its responsibility, which extends beyond the realm of professional practice: We have high expectations of our best artists because their work and words carry special weight. It is not possible to build this project without an opinion on larger issues—real issues of tolerance—in the region. What is Gehry's? This is not a question of the use of titanium versus Jerusalem stone. It is one of justice. ■

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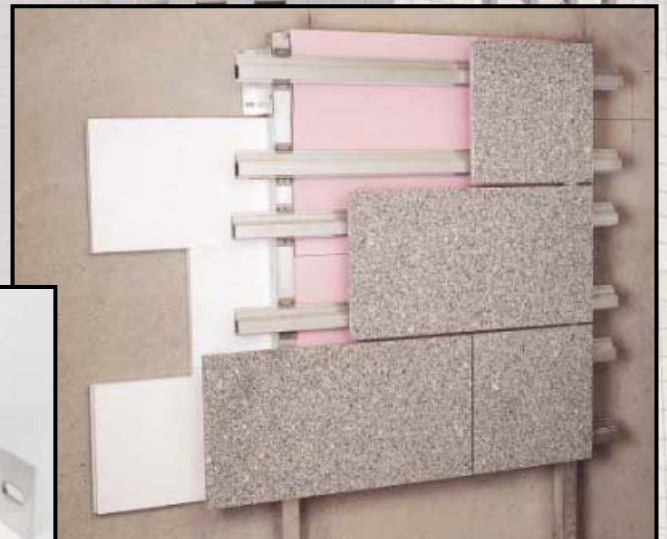
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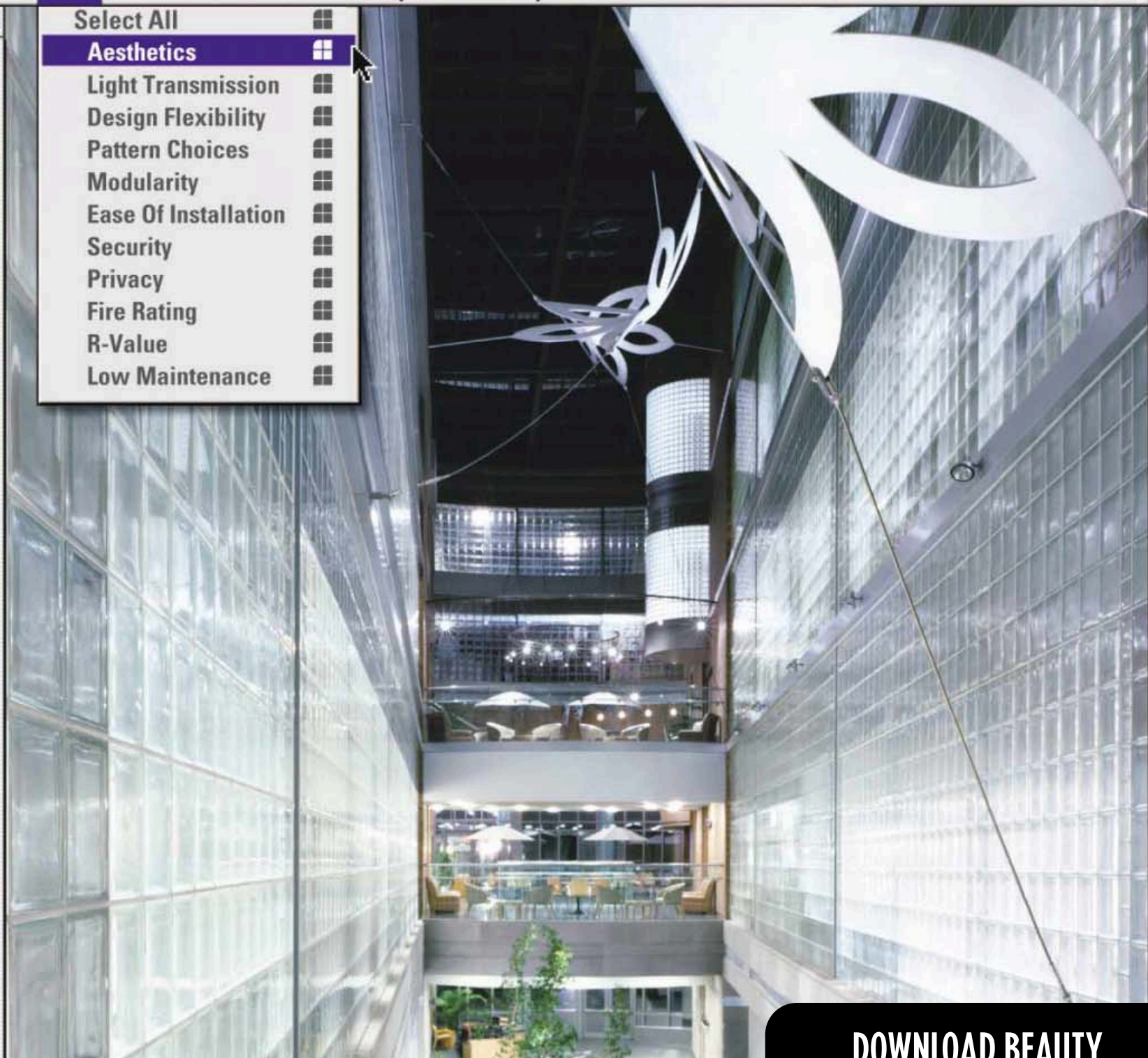
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Art Center College takes design discourse public

Commentary

By Joseph Giovannini

DEPARTMENTS

Thomas Jefferson, who extolled the moral virtues of the land over what he considered the evils of the city, invented the idea of the American campus at the University of Virginia and set a lasting tradition of academia removed from the city in a purer world of its own. Design conferences have followed suit, famously in Aspen, Colorado, and, recently, at the TED conferences in Monterey, California, idyllic places where clean air presumably gives that extra boost of clarity.

In March, the Art Center College of Design in Pasadena, California, challenged all that with its first biennial design conference, "Stories from the Source: Design Excursions Out of the Ordinary." In the epicenter of American suburbia, not far from the oak-spotted Arroyo Seco Park and the Huntington Gardens, Richard Koshalek, Art Center president, brought his school off its serene hillside campus and design conferences out of their bucolic hideaways into the grid and grit of the city. The conference inaugurated the first building of the school's new South Campus, accessible to anyone just off the Pasadena freeway or the Gold Line, one of Los Angeles's new light-rail lines. Koshalek joined what seemed to be mutually exclusive spaces: asphalt and the ivory tower.

In the midst of shaping a new outreach campus in the thick of downtown Pasadena, where he plans to open design to a wider audience

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on a daily basis in a complex of old industrial buildings, Koshalek linked the urbanizing polemic of his new building with a conference that brought an international roster of speakers together in a sustained moment of academic extroversion.

He also pivoted the conference in the direction of the neighboring California Institute of Technology, opening up Pasadena's other self-isolated campus just down the road by bringing its scientific discourse into the design loop. Cal Tech president David Baltimore, a Nobel laureate in biology, opened the conference with a breathtaking talk explaining no less than the design of the universe as a self-organizing system of forces. Charles Elachi, director of the Jet Propulsion Lab, closed the conference with an inspiring presentation of the story behind the Mars Rover.

The two-and-a-half-day event took place in a huge wind-tunnel facility recently remodeled by the Santa Monica firm Daly Genik. With images of speakers projected on multiple screens the size of Mt. Rushmore's presidents, the cavernous building conferred grandeur simply through the psychophysics of size.

Bookended by Baltimore and Elachi, speakers ranged from car designers and cartoonists to advertising gurus. Frank Gehry—who is designing a library on the original Art Center campus—Thom Mayne, and Greg Lynn represented architecture. But anyone who came expecting to find architecture billed as the mother art, at the top of a design pyramid à la Beaux Arts or Bauhaus theology, was disappointed. As portrayed in

this conference, no such controlling hierarchy exists in design, which has been completely balkanized.

The Art Center is famous for training car designers, and appropriately, General Motors was the main conference sponsor, providing one of the most pointed speakers, Bob Lutz, a GM vice president. A legendary design executive, he stated that Detroit lost its passion and market

in a postmodern era no longer focused on abstraction. But few people sustained the topic beyond lip service, and the occasional references did not add up, even in a Pointillist way, to a larger picture transcending independent disciplines and portraying, as the brochures promised, "design as the core of innovation and the medium in which the stories of our time are told."



James Dyson (left), inventor of a see-through vacuum cleaner, spoke of honesty in design. The Art Center, known for training car designers, held the conference in a wind-tunnel-turned-school-building by Daly Genik (right background).



position when designers were marginalized, and that design actually now makes the defining difference between cars, which otherwise increasingly exhibit the same standards of engineered performance.

Art Center senior vice president Erica Clark and Chee Pearlman, former editor of *ID* magazine, shaped the program as an open system, to cast a wide design net and capture a broad range of figures.

The putative theme of the conference was narrative, a pet subject

Without tight focus, the conference took off with a refreshing, provocative nonlinearity, producing an unpredictable sequence of figures. It was a big tent of designers representing different disciplines and m.o.'s. Japanese polymath Eiko Ishioka, who has designed everything from TV commercials to Olympic sportswear and sets for the play *M. Butterfly*, displayed a heroic yet surreal sensibility. In an almost confessional talk, Maira Kalman escorted the audience into her small

Commentary

studio, where she snuggled up to her subject with the warm introversion that permeates her children's books and *New Yorker* covers. Her subject, in its way, was the sensibility of subjectivity—a far cry from the objectivity of the amphibious robots, for example, created by Berkeley professor Robert Full, who demonstrated that the design of the muscles and skeletal parts of his robots (and by extension, living creatures) themselves determine patterns of movement, not the brain.

Standouts included Cameron Sinclair, charismatic founder of Architecture for Humanity, which organized a design competition for transitional shelters whose very construction builds communities through the training of local labor forces. Lee Clow enchanted the audience with TV ads that were filmic haiku. Clow is the man who created the *Think Different* cam-

paign for Apple after Steve Jobs took back the company and needed to announce its change of ethos—back to creativity—before any new products were developed. Peter Girardi, founder of Funny Garbage, detailed his intellectual biography, from *Mad Magazine*—“vital to my survival”—through cereal boxes and his career as a graffiti artist roaming New York's subway yards. What he calls “crap culture” is the grist for his art.

The great value of the conference was the presentation of a huge amount of material in a raw, virtually unedited flow, sometimes with serendipitous juxtapositions. The downside was an inability to develop chance intersections of serious ideas. Lutz noted that in car design the “passion and emotion essential to good design” belong to the “skilled designer with a skilled clay modeler,” but escape computer modeling with

its emphasis on a surface vocabulary. Greg Lynn begged to differ, noting that he had a passionate relationship with his computer. He spoke of new digital technologies coming together as a crucible for “new kinds of synthesis,” forging a new moment: “Computers have leveled the field,” he said. Other than Lynn's commentary, the computer as the ur-instrument across disciplines was never discussed, even though it provides design a potentially unifying technology, and a consolidated narrative.

Soft-spoken James Dyson, who invented the see-through, bagless, cyclone vacuum cleaner that has humbled Hoover, also took on Lutz implicitly. Dyson champions honesty in design as a direct expression of engineering, not styling.

Thom Mayne advocated design generated by systematic operations rather than composition, a position that theoretically eliminates the author. Yet no one took up the argument, not even Gehry, a master composer. Simmering just

below the surface of all the talk was the issue of subjective versus objective design, the emotional versus the rational.

Graphic designer Bruce Mau delivered perhaps the only overview of design in a talk about massive change. He spoke of the abandonment of traditional disciplines like graphics, architecture, and industrial design in favor of a globalized design culture based in broad economies. But his potentially explosive observations remained self-contained. The inability of the event's format to develop these idea intersections across standalone talks condemned the event as a whole to the anecdotal. The conference left the impression that it was less about ideas than energy, not a synthesis of thought but a confluence of figures designing in parallel universes. Chee Pearlman said she conceived the conference like a magazine, trying for the stimulating mix. She succeeded. But sometimes you want, and need, to read a book. ■

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Design_Shift: How computers and the architects who love them are changing the world

Books

Digital Ground: Architecture, Pervasive Computing, and Environmental Knowing, by Malcolm McCullough. Cambridge, Mass.: MIT Press, 2004, 262 pages, \$38.

The pervasiveness of computers and other digital technology is, for Malcolm McCullough, not a curse but a design challenge. In this well-written book, McCullough, associate professor of architecture and design at the University of Michigan, leads us through a well-reasoned argument for embracing good design as a way of offsetting many of the intrusive effects of computers in our lives.

There are more of them than there are of us. A decade ago, the number of microprocessors (those little chips that run all kinds of electronic gadgets) surpassed the globe's human population. Today, computers and other electronic devices are ubiquitous, McCullough writes, because they are now imbedded in our world, everywhere, where we can't see them. They have become like electricity itself—surrounding us, yet invisible, and just as essential. Omnipresent computers change the places and ways we get information and interact—it can happen anywhere, anytime—and thus upset daily living. This is just one of the reasons that the blabbering cell-phone user next to you on the train or on the sidewalk is so annoying—the context for discussing the personal is now public.

For McCullough, this is the crux of the situation: The placelessness of our digital lives (access from any-

where, to anywhere) makes it even more important for our bodies to be situated in an identifiable space, in a nurturing place. Reading McCullough, I was reminded of Alvin Toffler's observation more than 25 years ago that high tech increases the need for high touch. The more estranged we become from the material here-and-now, the more we need grounding in it.

McCullough's answer is "digital grounding," an approach to architecture that emphasizes place-centered design. He explores these ideas most fully in Chapter 8, the heart of his book. McCullough does not see place as a nostalgic throwback. Instead, place is purposely designed for social interaction. It gives our digitally dominated lives a locus, in which the new conventions of living can be performed. It is not a retreat from technology, but an attempt to balance the unstable digital realm with our human need for stability. "In our age of technological saturation," he observes, "response to place becomes the most practical adaptation strategy of all." This book offers architects, designers, and everyone

else a way to think about how we might intelligently respond to the computer kudzu without letting it take over the garden. *Michael J. Crosbie*

Next Generation Architecture: Folds, Blobs, and Boxes, by Joseph Rosa. New York: Rizzoli International Publications, 2003, 240 pages, \$45.

Next Generation Architecture looks at the range of work being shaped, rendered, and fabricated by digital technology—work that includes folds, blobs, and morphed boxes. Rosa traces blob construction from its predigital forerunners—Frederick Kiesler, John Lautner, and Buckminster Fuller—to Frank Gehry and the younger blobmeisters (including Greg Lynn, Doug Garofalo, Iwamoto Scott, Jakob + MacFarlane, Kolatan/MacDonald, William Massie, SHoP, and UN Studio). Rosa credits Bernard Tschumi for disseminating digital design by establishing the first paperless design studios at Columbia University in 1994. Rosa notes that most digerati either taught or studied there. He cites Gehry's Experience Music Project in Seattle, completed in 2000, as a "model for what digital blob architecture can be in the 21st century" and Eisenman's 1997 scheme for the Staten Island Institute of Arts and Sciences as a model for the digital fold building.

Digital design, rather than being reductive, writes Rosa, is fusing with other media to generate new types of buildings that can respond to the

human voice, other sounds, and/or physical movement. He observes that digitizing the design process has allowed architects to explore a sort of critical digital regionalism that incorporates conditions of site, program, and culture. Among Rosa's examples are the landscapes and urban design work of Field Operations (Stan Allen and James Corner). Not surprisingly, digital architecture exhibits optimism about architecture's possibilities and is changing the architectural office, which can now exist anywhere designers have access to hard drives.

Many of the projects in this book are unbuilt. Among built exam-



ples is SHoP's temporary structure in P.S. 1 Contemporary Art Center's outdoor courtyard on Long Island City, New York. Completed in 2000, it is a tilting, rolling, blob-shaped surface, made of 6,000 2-by-2-inch cedar strips that incorporate roof, walls, benches, and boardwalk. Visually and physically engaging, it tells me that although digital architects may have replaced such architectural standards as beauty, scale, and proportion with new values that prize the smooth, supple, and morphed, as Rosa writes, their

work will be judged by the same criteria as more familiar architecture. We'll still ask how well a building performs, whether its form, materials, size, and composition are appropriate to its mission and context, and whether it lifts the spirit. And don't forget beauty. We value it now more than ever.

Andrea Oppenheimer Dean

What is OMA: Considering Rem Koolhaas and the Office for Metropolitan Architecture, by Rem Koolhaas. Rotterdam: Nai Publishers, 2003, 184 pages, \$30.

What is OMA is a collection of essays from a respected publisher in the Netherlands, yet none of the authors, who include Aaron Betsky, Neil Leach, Anthony Vidler, Michael Sorkin, and Frederic Jameson, is credited with editing the volume. Moreover, the pictures of Koolhaas's buildings and projects do not directly relate to the text.

This compact volume is mostly hagiography, often disguised as criticism. Koolhaas is portrayed as the architect of our time who has most successfully tamed communications and media and has turned architecture into a "system of representation," what many avant-garde intellectuals believe it should be. His attitudes, his buildings, his personal style, and his writings are presented as being prescient about the 21st century. He is pictured as understanding, like no architect before him, what cyberspace, globalization, and late capitalism really mean. In this regard, he is compared to such geniuses of the past as Leonardo da Vinci, Aldous Huxley, and Jonathan Swift (in the essay by H.J.A. Hofland). But these comparisons do not help us understand Koolhaas; they

merely make the authors seem pretentious and their subject look arrogant.

Aaron Betsky is the most prostrate, declaiming, "He has managed, as the only major architect working today, to propose the building blocks for a post-urban condition in which the essential elements of what makes a cohesive culture are dispersed more and more around the globe and appear only as floating, unstable images." If this is true, then it needs some more explanation and some reasons why, say, Zaha Hadid, Peter Eisenman,

Bernard Tschumi, or even Leon Krier don't fill the bill. Or, perhaps Betsky might tell us just how the "floating images" represent a cohesive culture, or how a cohesive culture is indeed possible in the modern world. "Floating, unstable images" have been

the emblems of the future at least since the Soviet avant-garde of the 1920s, and through Brazilian Modernism of the 1950s (a style and period close to Koolhaas's heart), into the present. And this even before cyberspace came to dominate the minds of vanguard architects.

A few of these writers desist from undiluted endorsement of the genius of "the Dutchman," as Michael Sorkin refers to him in one of the few overtly critical pieces. His one-page essay is excerpted from an article published in 2001; one wishes it had been longer. Another short piece, by Anthony Vidler, excerpted from Vidler's *The Architectural Uncanny* (1992), brings up some significant points about irony in Koolhaas's work, but most of the longer essays are tedious and filled with unsubstantiated, often silly, pronouncements. Ian Buruma tells us, "He has the modesty to be aware of his megalomania." Perhaps

it would be better phrased, "He affects the modesty ..."

Koolhaas's own writings tell us much more about him and his ideas than do these essays. The photographic presentation of his work—fragmentary and cobbled together—is not helpful in leading us to an understanding. There are so many references in this book to Koolhaas's own writings that one is tempted to throw it down and pick up one of the maestro's own tomes, which is what I did. *S, M, L, XL* and *Delirious New York* are much more interesting, and better expositions of the Dutchman's ideas than *What is OMA*.

Some architects, like James Stirling or Richard Meier, have been incapable of, or uninterested in, explaining themselves, and they need astute historians and critics to do it for them. Koolhaas is not one of these, so why settle for second-hand theory when we can go straight to the horse's mouth?

Thomas L. Schumacher

Minimal Architecture: From Contemporary International Style to New Strategies, edited by Ilka and Andreas Ruby, Angeli Sachs, and Philip Ursprung. New York: Prestel, 2004, 175 pages, \$65.

Is Minimalism an architectural style? Is it the description of a cultural logic? "The harder you try to grasp it, the more the subject avoids definition," write Ilka and Andreas Ruby. There is no founding work, no founding manifesto, no exhibition that served as a media initiation of a new style, like MoMA's 1932 show introducing the International Style.

Minimal architecture was a reaction against Postmodernism in the 1980s and Deconstructivism in the '90s, and adherents welcomed every indication of a supposed affiliation between Minimal art and architecture. But the actual relationship was very distant, writes Philip

Ursprung. Minimal art, a 1960s American invention, grew out of a rejection of European Modernism and traditional spatial concepts, and Minimal artists, by eliminating frames and plinths from large, abstract artwork, wanted to erase distinctions between art and its surroundings. Paradoxically, a minimal vocabulary applied to architecture reinforced the separateness of the built object from its surroundings. A constant of Minimal architecture, write Ilka and Andreas Ruby, was a wish to cleanse contemporary culture. They quote the product designer Massimo Vignelli's description of Minimalism as "a far-reaching reaction to the noise, the visual noise, the disorder, and the vulgarity of our times." Ironically, Minimal architecture became the style of Prada and Versace, the incarnation of the very materialist, superficial culture to which Minimal architecture had opposed itself.

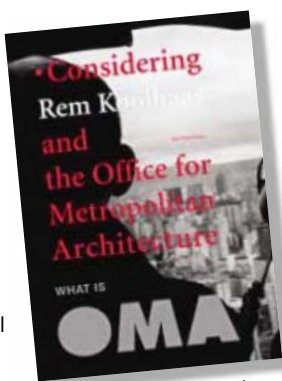
The authors identify three types of Minimal architecture—Essential Minimalism, Meta-Minimalism, and Trans-Minimalism—and organize projects accordingly. Angeli Sachs observes that Essential Minimalism adopts Minimal art's look—simple geometric forms, modular elements, smooth surfaces, additive compositions, and the rejection of balance and spatial hierarchies—and that it

is introverted and obscures its construction. Included in this section is work by Tadao Ando, Herzog & de Meuron, and Gignol/Guyer.

Meta-Minimalism, by pushing out the boundaries, moved Minimalism into a self-reflective phase.

Meta-Minimalists, instead of repeating the canon, began playing with it. Examples are Herzog & de Meuron's 1990s buildings with membranelike, often shimmering surfaces.

Trans-Minimalism, rather than adopting Minimal art's vocabulary, write the authors, was inspired by Minimal art's attempt to eliminate boundaries between itself and its





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Books

surroundings. As examples, they cite Shigeru Ban's Curtain Wall House and his Naked House, both in Tokyo, and OMA's Prada Store in New York.

The book's strength lies in overturning received ideas, but its logic requires some assembly. Its title is inclusive, yet it feels incomplete: Discussions about Minimal architecture during the 1980s and '90s took place primarily in Europe and Japan, so the book includes only the work of 20 European and Japanese Minimalists. One wonders where American architects—such as Gwathmey Siegel, Antoine Predock, and Richard Meier—who remained committed to a Minimal vocabulary during the 1980s and '90s, would fit. The book's logic implies a progression from Essential Minimalism through Meta-Minimalism to Trans-Minimalism, but you wouldn't know it from the authors' text, and their chosen projects don't show an evolution.

One thing is certain: *Minimal Architecture* is provocative, and after closing its covers, you're likely to look at many buildings not included in its pages with a fresh eye. *A.O.D.*

Masterpieces of Chicago Architecture, by John Zukowsky and Martha Thorne. New York: Rizzoli/Art Institute of Chicago, 2004, 240 pages, \$65.

This expansive compendium of Chicago architecture highlights the built and unbuilt legacy of a city long renowned for bold achievements in design. Culled from the collection of the Art Institute of Chicago's Department of Architecture, drawings and images narrate the contributions of Chicago architects past and present, including Daniel

Burnham, Stanley Tigerman, and Jeanne Gang, while acknowledging the iconic works of Louis Sullivan, Frank Lloyd Wright, Mies van der Rohe, and other masters.

Art Institute curator John Zukowsky's introduction is an unabashed celebration of the department's efforts to acquire,

organize, and exhibit the most significant examples of architectural representation. Indeed, the author and his colleagues have much to celebrate. In a little over

two decades, their permanent collection has grown to more than 130,000 drawings, several hundred building fragments and architectural models, and invaluable oral histories.

The bulk of this tome presents a straightforward, chronological look at the built and imagined works of Chicago's architectural canon. Alongside classics such as Sullivan's

Schlesinger and Mayer Store and Mies's IIT campus lie refreshing novelties like Buckminster Fuller's Dymaxion Car, which was designed for the Century of Progress Fair in 1933. Thrown into the mix are SITE's McDonald's Floating Restaurant (1983), Tigerman's *The Titanic*, a 1978 photo collage commenting on the fall of Chicago's Miesian Modernism, and Dan Wheeler's nautical-inspired North Avenue Beach House (1999). Hand-tinted photographs, watercolor renderings, and digital views all support this broad range of architectural innovation.

In her epilogue, associate curator Martha Thorne addresses Chicago's reputation for conservatism but insists on a millennial move toward nonconformity. Citing Rem Koolhaas's new campus center at IIT, as well as works by rising stars Jeanne Gang and Doug Garofalo, Thorne continues the book's forward trajectory. If the current spate of projects is any indication, the department will soon require more archive space. *Nick Olsen*



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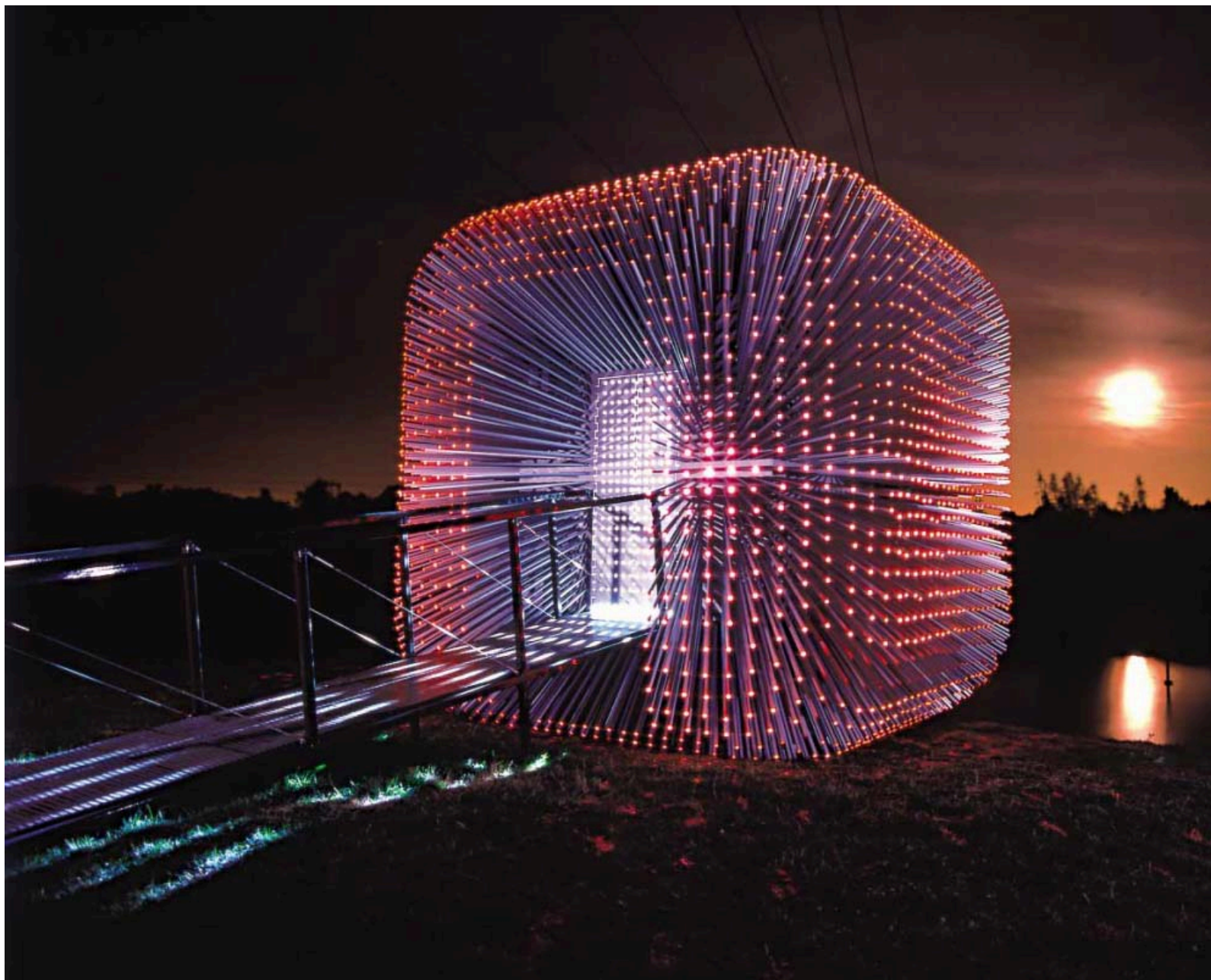
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Snapshot



By Phyllis Richardson

It has been compared to a glowing hedgehog, a spacecraft, and in the designer's own words, "a fakir's bed of nails," yet it is one of the most delightfully inventive follies ever to grace the English countryside. Now sited on Barnard's Farm, a privately owned sculpture garden in Essex, Thomas Heatherwick's anemonelike aluminum form is, he says, "an experiment in texture and in using many thin pieces to make something strong that could be placed any way up."

Some of the quirkiness is perhaps explained in the origins of the commission, a competition sponsored by English Heritage in 2000 to create a gazebolike structure known in Scottish parlance as a *sitooterie*, or a place to "sit oot" in. The winning designs were constructed as temporary buildings in the wooded landscape of Belsay House in Northumberland. One of the most remarkable to spring, almost literally, from that competition was the fantastical scheme wrought by the young, London-based Heatherwick and dubbed "The Hairy House": a wooden cube perforated by 5,000 slender oak staves that lifted the structure off the ground, surrounded it in a prickly shroud, and in

Sitooterie: sculptural folly in the English countryside

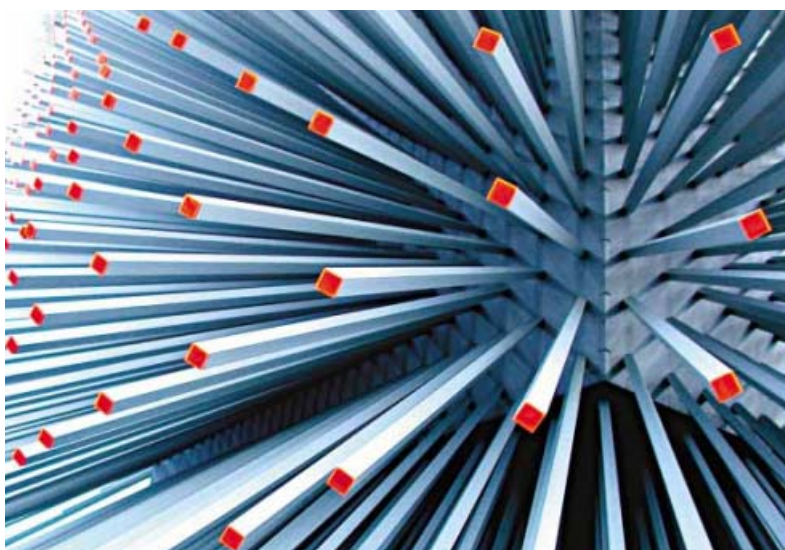
PHOTOGRAPHY: © STEVE SPELLER

Capped with translucent colored acrylic, the Sitooterie's tubes create an orangey glow in daylight and are lit from within at night by a single bulb.



some cases penetrated to the interior to provide wall texture and support for furnishings. It was this toothpick-style version that inspired the owner of Barnard's Farm to commission the permanent structure that now graces his farmland garden.

Wood turned to aluminum, and production moved from timber-milling techniques to metal-fabrication technology. The essential cubic core, with thousands of predrilled holes and a mass supported on a brushlike agglomeration of extruding members, remains. However, the staves have been replaced by long, thin, hollow rectangular pieces that had to be individually machined by an aeronautical engineering company in Southampton before being assembled on-site. The tubes are of different lengths and all point to the center of the cube. Capped with translucent colored acrylic, they effect an orangey glow in daylight and are lit from within at night by a single bulb. The designer admits, "The lighting is very low-tech." However, precision was essential. The aluminum skin is 0.6 inches thick and is pierced by 4,704 tubes adhered to the central 8-foot cube (which can hold about half a dozen adults) through finger joints that are formed at the end of each piece. With each tube having a hollow area of a mere 0.7 inches square, the designer ensured that the overall impression would be of a fuzzy, though tactile-seeming solidity that, on closer inspection, reveals an even more tactile multiplicity. Heatherwick, who is in the process of building the U.K.'s tallest sculpture in Manchester, has not just achieved a tale of design virtuosity. The Sitooterie is a demonstration of skilled, cutting-edge craftwork—the artful marriage of imagination and technology. ■





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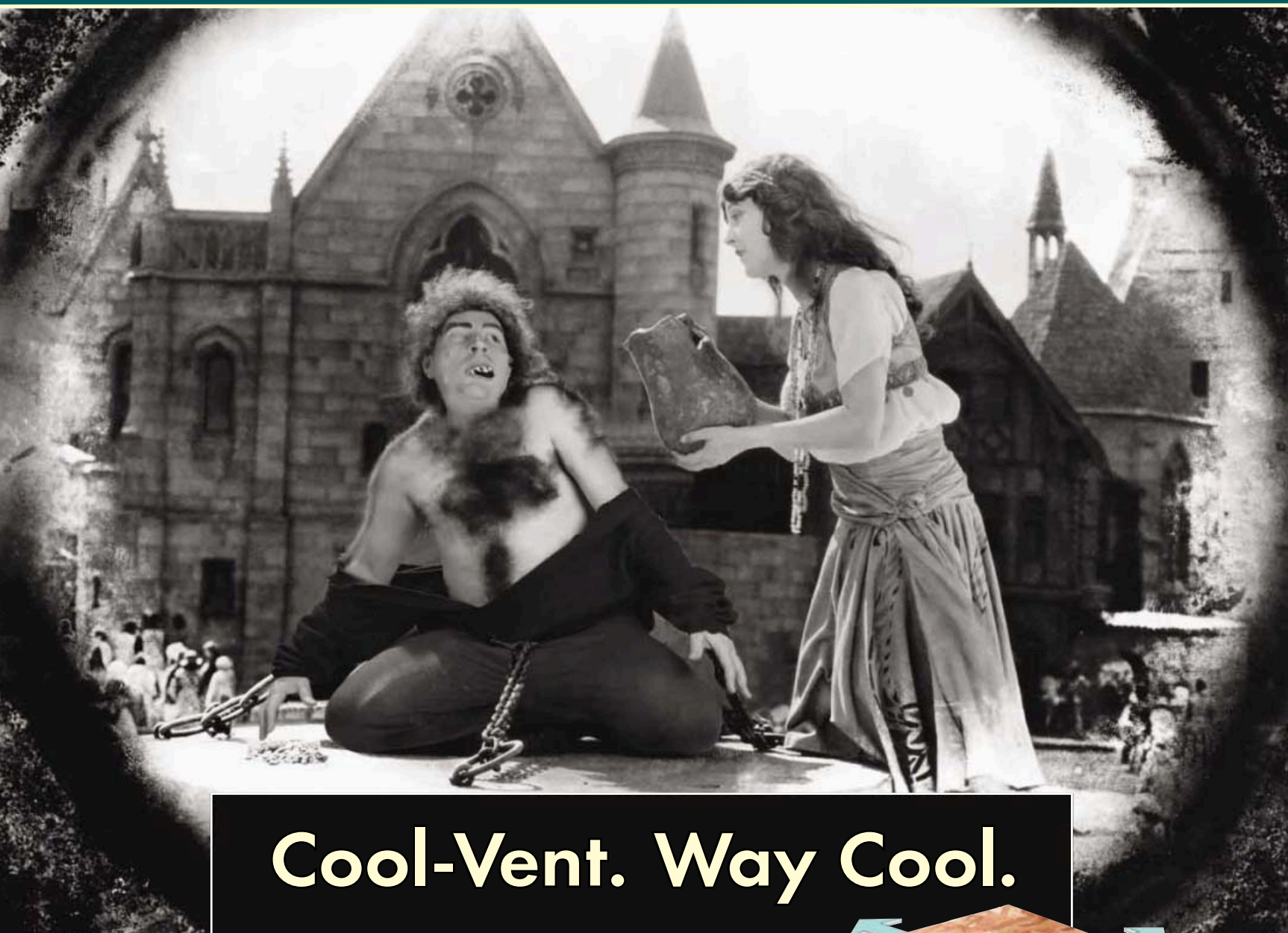
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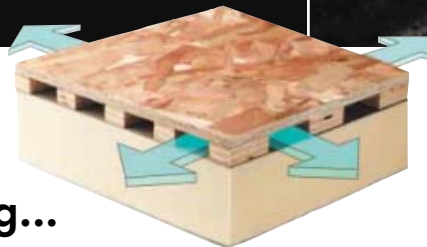


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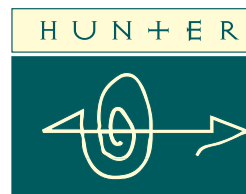
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American Institute of Architects

2004 Honor Awards

Architecture	p. 140
Interiors	p. 160
Urban Design	p. 168
25 Year Award	p. 172
Firm Award	p. 176
Gold Medal	p. 184

Excitement was palpable the evening of March 3rd at the National Building Museum, where a festive Accent on Architecture Gala dinner hosted by the AIA was attended by more than 1,000 guests—the largest turnout in the history of the event. They came to celebrate the AIA 2004 Honor Award winners for the Gold Medal, 25 Year Award, and Firm Award in the museum's Great Hall, a marvelous setting of open archways, light, and height for such an occasion. When Samuel Mockbee, FAIA, was announced as the Gold Medalist posthumously, his wife, Jackie, received the award on his behalf in a deeply moving speech.

She outlined his life and vision, and spoke of his legacy, both in the continued activities of the Rural Studio and in the careers of his four children. In particular, his youngest daughter, Carol, who works with the Rural Studio as an Outreach Fellow, is completing an unfin-

ished project dear to Sambo's heart: a memorial called the Subrosa Pantheon, a place for contemplation "under the roses." It is a fitting legacy of an illustrious career and will be completed in December 2004.

I.M. Pei, FAIA, then received the 25 Year Award for the East Wing of the National Gallery of Art, focusing his comments primarily on the beauty and force of John Russell Pope's adjacent 1941 West Building, which was the inspiration for Pei's contemporary contribution to the National Mall.

Ted Flato, FAIA, and David Lake, FAIA, of Lake/Flato Architects, which received the Firm Award, offered inspired speeches, then invited their entire partnership to the stage for congratulations. On the following pages, these top honorees are joined by 16 architecture, 8 interiors, and 5 urban design project winners, all of which provide stunning and intelligent examples of design excellence. Jane F. Kolleeny

ARCHITECTURE

From a tiny chapel that contemporizes traditional style to high-rise megastructures monumentalizing Western culture to houses celebrating the simple virtues of nature, 16 winning projects provide examples of stunning design. Architecture jury chair Adrian Smith, FAIA, describes the projects as diverse in typology, scale, context, economic means, and materiality. Common themes include energy conservation, cultural relevance, client identity, clever use of materials, and seamless integration of building services and structural systems into the fabric of the architecture. In this year's AIA Honor Awards program, young emergent talent and mature repeat winners join together in demonstrating that architecture is alive and well in every generation. Jane F. Kolleeny

1



1. Seaside Interfaith Chapel

Seaside, Fla.

Architect: Merrill and Pastor Architects

This charming chapel transforms the town of Seaside from an experiment in New Urbanism into a community. Becoming the physical focal point of the town, the chapel conveys a strong sense of

place, coherence, and spiritual unity. An elegant example of design and construction detail, it exhibits a sensitivity to form, incorporating traditional style into a modern framework. Natural light floods the predominantly white-washed wood interior, with altar walls stained to match the dark floors made of pinewood salvaged from north Florida rivers.

“Constructed of concrete and wrapped in wood, the chapel is a metaphor of inner strength with a humble exterior and a spiritual core.”



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“A very personal space full of elegant moments of whimsy—a place that is meant to be used and enjoyed.”

2



2. The Brain

Seattle

Architect: Olson Sundberg Kundig
Allen Architects

Aptly named The Brain, this film studio provides office, darkroom, and library space so the owner, a filmmaker, can use it as a retreat

from his adjacent residence to think and create. The cast-in-place concrete box nestles in the woods of a suburban site, providing intimacy and privacy. Floor-to-ceiling industrial steel windows allow plentiful light, modulated by theatrical curtains. The finely tailored building fits the spirit of the owner.

“Clear planning and exquisite detailing of materials combine to produce a project of incredible richness.”



3

3. The Point House

Polson, Mont.

Architect: Bohlin Cywinski
Jackson

Superbly sited on a secluded peninsula that extends into a large Montana lake, the house establishes a dialogue between land and water. Part of a year-round family compound, it melds gently with the unspoiled natural beauty of the land. Resting among evergreens, the house extends from the rock spine to the edge of the dense wetlands. Building elements are organized along a wall of Cor-Ten steel that slices through the site. Distinctions between inside and out become intentionally blurred with tall walls of glass and large sliding panels.





4

4. Chicken Point Cabin

Hayden Lake, Ind.

Architect: Olson Sundberg
Kundig Allen Architects

This lakeside shelter has a large window wall that literally opens the entire living room to the woods and lake beyond. The sim-

ple and durable low-maintenance materials—concrete floors, concrete block, plywood, steel—remain unfinished to age naturally, merging seamlessly with the surrounding landscape. Sleeping 10, this weekend country “cabin” retreat makes big moves with a small palette.



“There is a clarity and elegance in the detailing of the humble and modest materials that ennobles the project with richness.”



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5. Center of Gravity Foundation Hall
Jemez Springs, N.Mex.
Architect: *Predock_Frane*
Architects

This new, 3,000-square-foot meditation hall serves as the primary teaching and practice space for a Zen Buddhist compound. A floating, folded metal roof plane sits on purlins that can-

tilever over exterior walking meditation areas. Beams span over the hall, resting on steel columns. Delicate translucent polycarbonate walls intersect massive rammed earth walls. Sliding wood panels open onto the garden, extending the austere interior space out to the landscape, creating a serene but dynamic sanctuary for contemplation.

5



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**6. Northeastern University West
Campus Residence Halls**

Boston

Architect: *William Rawn
Associates*

Establishing these three new residence halls to accommodate 1,000 students helps fulfill the university's transformative vision of invigorating its threatened

urban presence. The facilities create an exciting environment for students' personal growth; contribute to the university's goal of achieving a higher academic standing; and energize an urban area that has long been unappealing. Opening to the front edge of a new west campus, the dorms engage and unify the university with the city.

6



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7. Steelcase - Project MAC*Gaines Township, Mich.***Architect:** *Thomas Phifer and Partners*

To accommodate an accelerated construction schedule, the architect used prefabricated components to build this two-story spec building. Built to be flexible, the steel frame-and-shell structure allows interior spaces to change in size for a wide variety of uses. Abundant natural light and localized climate control contribute to the amenities. The undulating roof unifies the building with a lightweight canopy. The spatial connectivity of the open-plan interior encourages a humane, egalitarian workplace fostering hard work and creativity.

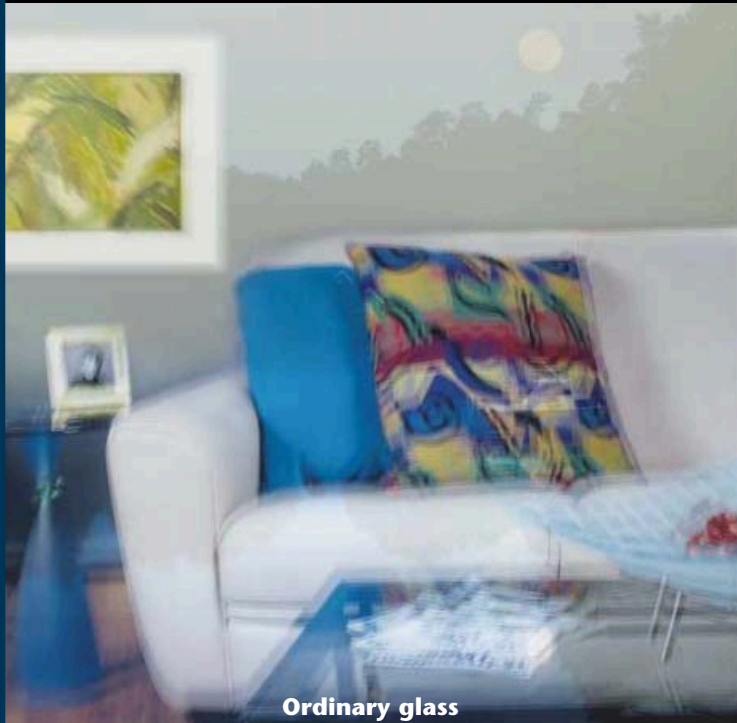
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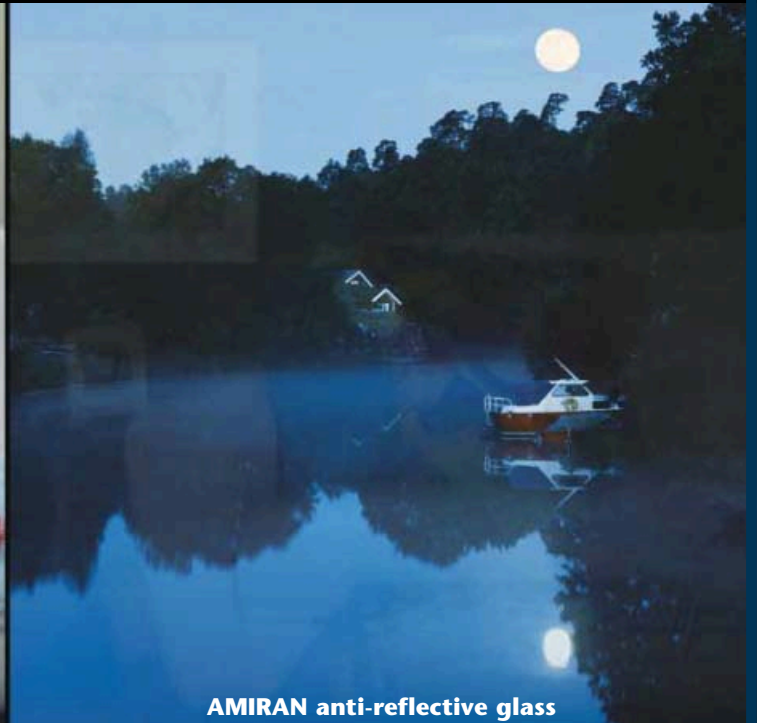
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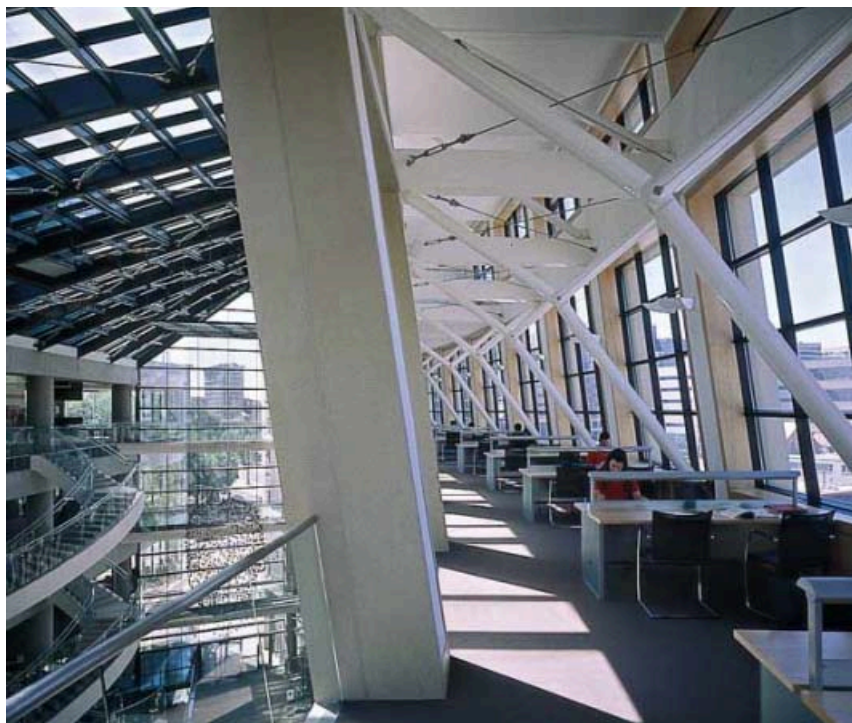
8

8. Salt Lake City Public Library
Salt Lake City
Architect: Moshe Safdie and Associates

This new, \$78 million library features a five-story administration block next to a triangular main building for the book stacks, with a glass-enclosed public Urban Room and adjoining piazza serving the city. The building contains many dramatic features, notably the glazed curved wall that borders the stacks, accommodates vertical circulation, and overlooks the outdoor plaza. Reading areas for patrons and remote places for study are accessible by bridges. The building provides a gathering place for study as well as a lively destination for public events.



“An icon for the city, the building’s sloping, curving, leaning wall delights all. Walking to the roof garden provides spectacular views of the city and the surrounding mountains.”





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“Powerful in concept and beautifully executed, a glass room emerges from a time-worn wooden barn.”

9



9. DoMa Gallery

Baltimore County, Md.

Architect: W Architecture and Landscape Architecture

[RECORD, July 2003, page 126]

Two art collectors transformed a historic farm into a place to entertain, live, and display their growing contemporary art collection. A barn ruin with

weathered slats sitting on a stone foundation became the centerpiece of this domestic compound comprising a charming group of outbuildings, cultivated gardens, and meadows. A glazed volume inserted within the original barn structure creates transparency and opens up the interior to the landscape beyond.



10. Taghkanic House

Hudson, N.Y.

Architect: Thomas Phifer and Partners

[RECORD, April 2003, page 140]

Sited high on a knoll at the edge of the woods, this house emerges dramatically as a pavilion of steel and glass set on a plinth. The site borders a meadow to the south, while

spectacular views open to the Hudson River valley and distant mountains to the west. Finely detailed, the residence provides 360-degree views. A system of operable exterior sunshades modulates sun and shade. The house takes advantage of the topography by tucking the quiet spaces into the land, which forms a base supporting the light-filled areas of the public functions of the house above.

“There is a seamless flow of outside and inside spaces from the skillful integration of the building into the hill.”



10





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11. Los Angeles Design Center and Cisco Brothers Showroom

Los Angeles

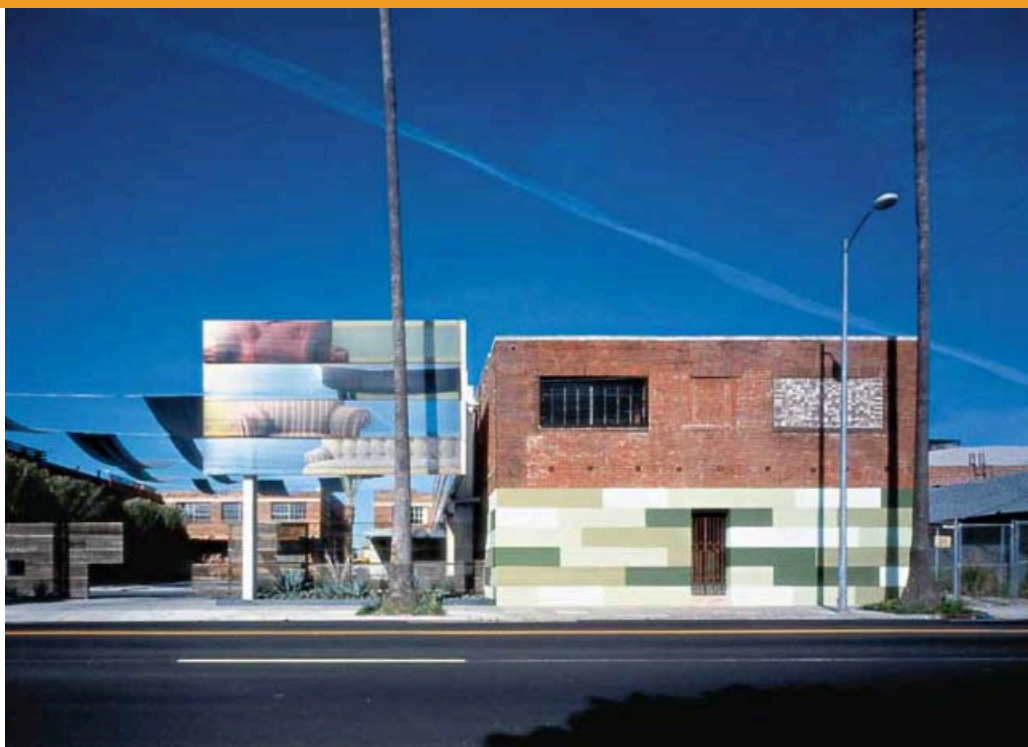
Architect: John Friedman Alice
Kimm Architects

[RECORD, July 2003, page 142]

Restoring this furniture design center in South Central Los Angeles kicks off a plan to revitalize the depressed area, home to many of the city's furniture manufacturers. Simple, utilitarian materials, color, and signage cheer up this cluster of rundown brick warehouses. A former auto court has been transformed into a rich outdoor foyer and public event space for the complex. Hiding, revealing, and/or filtering aspects of the original buildings and environment animates the character of the site.

11

“A project with great energy and bold, artful gestures. A creative way to breathe new life into what are otherwise forgettable fringe buildings.”



“This highly refined synthesis of architecture and engineering defines the state-of-the-art office tower for Germany.”

12

12. Deutsche Post

Bonn, Germany

Architect: Murphy/Jahn

This modern and sustainable office tower consists of two crescent-shaped halves separated by an atrium and rising around a series of nine-story sky gardens, which serve as communication floors and elevator crossovers. A glass outer shell on the building enables natural ventilation and abundant light in all work and circulation areas. Individually controlled, mechanically operated solar shades give this building a human scale and exterior animation that varies throughout the day. In essence, the skin of the building modulates its own climate.



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13. Telenor Headquarters*Oslo, Norway***Architect:** NBBJ/HUS/PKA*[RECORD, May 2003, page 222]*

This complex of open public spaces, enclosed semipublic spaces, and private atrium living rooms supports flexible workstations. Employees have no permanent offices but are issued a mobile phone and laptop and can plug into any available location in the complex to perform their work. The architecture is experimental, with a rich palate of materials, colors, and textures, creating a tapestry which, when combined with the powerful artworks commissioned for the interior, presents a fascinating and satisfying environment.



13

“There is a wonderful informality about the composition that encourages creative thinking and discussion.”



14



“Simple materials, elegant proportions, sophisticated colors, and skybridges make this tower a delight on the Chicago skyline.”

14. Skybridge at**One North Halsted***Chicago***Architect:** Perkins & Will*[RECORD, May 2004, page 136]*

An icon for urban living in Chicago, this mixed-use project incorporates practical community amenities with an elegantly articulated residential tower. The flexibility afforded residents by intelligent planning provides opportunities for customization of unit size and layout. The glass-enclosed skybridges break up the massing of the building while increasing the number of corner units and views of downtown.



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Elementary School, Landover, MD
Owner: Prince Georges County Public Schools
Architect: Delmar Architects, P.A.
General Contractor: Hess-Gulford Joint Venture
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Profile: Redi-Roof Standing Seam w/ offsets
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15. State Street Village, ITT
Chicago

Architect: Murphy/Jahn
[RECORD, May 2004, page 130]

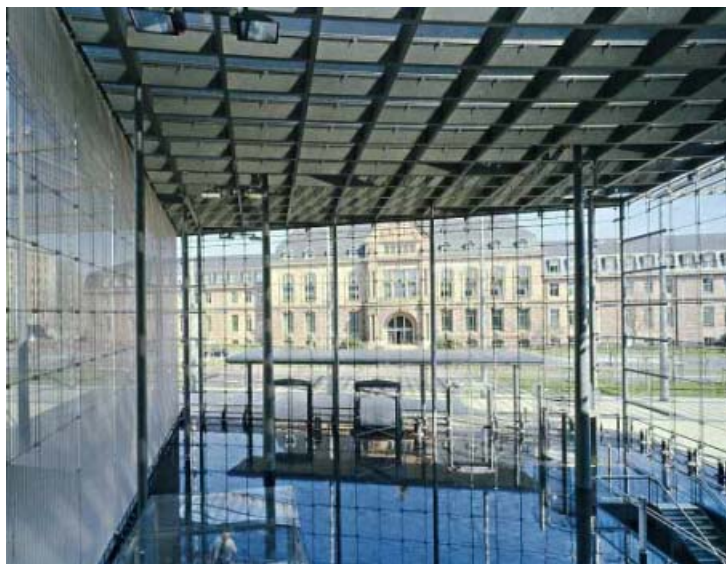
Sited across from the college's main quadrangle and Mies van der Rohe's legendary Crown Hall, this student residence con-

veys a clear response both to the urban context on one side and the campus on the other. The building successfully and elegantly uses its site restrictions and tight linear space to advantage, connecting separated parts of the campus by becoming a pass-through.

16. Bayer
Leverkusen, Germany
Architect: Murphy/Jahn

This semi-elliptical office building engages a park forming an interior courtyard; the opposite street side features a pergola over

the transparent main entrance. The building appears like a crystal case wrapped around the occupied floor plates. Energy-efficient design combines with unparalleled engineering expertise to make the building both stunning and practical.



15



“Rather than designing an innocuous background building, the architect responded with a bold new statement.”

16



“Every element of this building is about glass. Where floors, walls, ceilings, and even ductwork could be glass, they are.”

INTERIORS

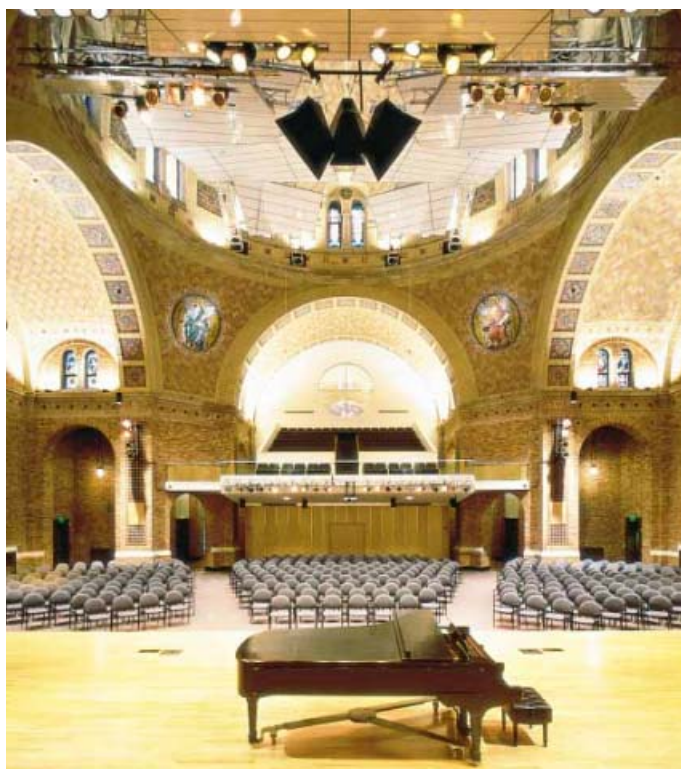
This year's AIA Interiors Honor Award winners share the common thread of renovation and adaptive reuse. These eight projects perform similar transformations, either reinvigorating a historic building or brightening an industrial one. Interior Architecture jury chair Lee F. Mindel, FAIA, remarked that [the jurors] "saw a lot of 'flying schreprels' and 'blobs,' but the projects with simple, bold, elegant ideas stood out." Solutions range from inventive and high-tech to traditional and rigorous. From the clever transformation of a historic church into a performance space using acoustic panels to augment the existing design (below), to relocating and enlivening a modern, welcoming library in a formerly uninviting space, these projects sought and found a high level of personal expression beyond the trendy and predictable. Jane F. Kolleeny

1



1. Carol and Carl Montante Cultural Center
Buffalo
Architect: Cannon Design

With a sensitive series of gestures, the architect adapted this 1926 historic church into a 600-seat, multipurpose performance space at a liberal arts college campus. Building systems were upgraded for contemporary use and acoustics retooled to meet performance criteria. Sound-reflecting surfaces inserted within the domed volume improve the acoustics without detracting from the design. New forms and materials are articulated cleanly and simply to enhance the old.



“Masterfully handled; the technology becomes a new ornament in an intricately embellished space.”

“Christo’s installation of blue tents in Japan became a metaphor for the project’s master plan and an expression of the client’s mission.”

2. Pallotta TeamWorks New Headquarters

Los Angeles

Architect: *Clive Wilkinson Architects*

This inventive solution resulted from an inspired vision for a new workplace tempered by radical budget constraints. Tent environments personalized a large warehouse space, creating intimate and distinct work neighborhoods and providing containment for cooling, heating, and lighting. Alleviating the need to build structures, the tents, suspended from the roof-support column grid and stretching in different directions according to programmatic needs, are anchored down by inexpensive, prefabricated shipping containers.



2

PHOTOGRAPHY: © TIM WILKES (OPPOSITE); BENNY CHAN/FOTOWORKS (THIS PAGE)



**3. New York City Public School 42,
Queens, Library**

Arverne, N.Y.

Architect: *Weiss/Manfredi
Architects*

The architect moved the existing library from its former location on the fourth floor to the first floor, adjacent to the school's main entrance and cafeteria, redefining its place and purpose within the school. Formerly removed from students and remote from community-based activities, the library's new central location makes it visible to pedestrians on the street and within easy access of students. A curvilinear wall shaped by lapped plywood winds through the space, defining it and providing shelving, while deep windows with seats invite users to curl up with a book. A silkscreened transparent curtain can be opened or closed and rolling bookshelves moved to reconfigure the space in various ways.



“Organized and funded by the Robin Hood Foundation and built by the school board, this pro bono library is part of a pilot project to improve New York City’s urban schools.”

3



“The asymmetry in the architect’s response relieves the pressure of compliance to the existing, A-frame church.”

4. First Presbyterian Church of Encino

Encino, Calif.

Architect: Trevor Abramson, Abramson Teiger Architects

This unique intervention in an existing 1950s church served two goals—to bring light into the interior and to create a sense of closeness and reverie for the congregation. The pews were reorganized in the round and the floor of the chancel was brought forward and lowered to bring the pastor and choir closer to the assembly. Religious symbolism permeates the design. Light as metaphor is shaped by irregularly sculpted volumes that provide ample illumination from multiple openings. The two facing curved surfaces that shelter the sanctuary and give the primary form to the worship space resemble hands in prayer. Other features of the design express key elements of the service.

4





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**5. NAI Exhibition - *Silent Collisions:*
Morphosis Retrospective**
Rotterdam, the Netherlands
Architect: *Morphosis*

This exhibition addressed the crossroads that architects are facing in the transition from tangible, physical materials and modes of expression—drawings and models—to the digital technologies that increasingly dominate practice, blurring distinctions between built form and design process. The architect found Rotterdam,

with its stratified terrain of soil and water, a fitting place to present this dichotomy by means of a luminous fold suspended in space, which moves slowly, almost imperceptibly, changing in the final moments of the cycle into a surface for projected images of the firm's current work. Two decades of drawings and models are presented in a solid, catacomblike structure beneath. The juxtaposed changing and concrete displays of past and present work illustrate the architect's quandary.

5



“Conventional notions of ceilings and walls are challenged in this high-tech and poetic exploration of the architect’s process.”



6

6. Academic Center for Student Athletes at Louisiana State University
Baton Rouge, La.
Architect: *Trahan Architects*
[RECORD, November 2003, page 172]

This interior renovation creates a sequence of clean, clear spaces that pare down the 1927 architectural language to its essence. The architect retained the building's symmetrical organization while removing remodeling undertaken over the years that had obscured the original interior. A simple and consistent palette of colors—light for the rooms at the building's perimeter, warmer and darker at the core—minimizes visual distractions for the students and allows the original attributes of the historic building to come forth.

“A sensitive interior interpretation shows a sophisticated reading of the original building.”



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7. American Meteorological Society Editorial Offices

Boston

Architect: Annmahian Winton Architects

[RECORD, June 2002, page 203]

The architect transformed a historic barn and carriage house previously used for storage and staff meetings to new offices for the company's editorial staff. A brick structure topped by a timber roof supported by thick

square beams and rafters became host to a modern insertion that is both rustic and refined. Materials such as plywood, structural lumber, fiberglass panels, and unfinished steel complement the character of the existing structure.

“Love of detail is celebrated; this looks like it was built by a master carpenter.”



7



8. COop Editorial

Santa Monica, Calif.

Architect: Pugh + Scarpa

[RECORD, September 2003, page 156]

The architect converted a single-story structure, designed by Frank Gehry in 1963, into a video-editing facility for the client. Three distinct, freestanding rooms house a conference room, the executive producer's office, and bathrooms, all of which float in the rough space, perched on a neoprene pad above the floor. The architect used unique color and materials to distinguish each room. Bright blue rubber sheeting lines the conference room, while the bathrooms feature white interiors with multihued acrylic panels.

“A dramatic, undulating, wood-paneled wall runs the length of the building, enhancing the light and separating the main area from the darkened editing spaces.”

8



URBAN DESIGN

Perhaps the least glamorous of the AIA Honor Award-winning projects are those for urban design. But what they lack in swagger, they possess in importance—without planning, architecture becomes vacant of contextual meaning. The jury sought and found projects combining practicality and invention; restraint and proactivity. The winning plans all demonstrate the possibility of creating compact, pedestrian-friendly, sustainable communities. Transportation also plays an important role in each of the projects, encouraging architects, clients, and communities to consider the automobile as less central to the planning effort. Jane. F. Kolleeny

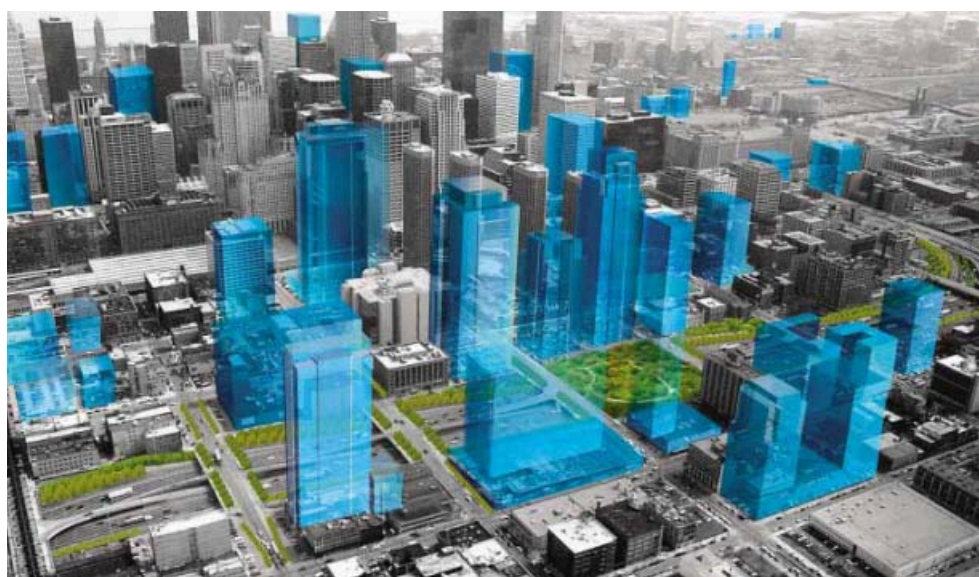
1. Chicago Central Area Plan

Chicago

Architect: Skidmore, Owings & Merrill

Chicago's downtown area experienced tremendous growth in the 1990s, with businesses prospering, residential neighborhoods emerging, and tourism flourishing. Along with success comes the need to ask new questions about density, amenities, transportation, buildings, and jobs. SOM's plan addresses these issues, strengthening the downtown economy, improving and extending the transit systems, increasing open spaces and parks, creating new waterfronts areas, and encouraging new mixed-use neighborhoods.

"This project reveals an understanding of the city as a growing organism."



2. Mission Bay Redevelopment Plan

San Francisco

Architect: Johnson Fain

This 303-acre area, the largest undeveloped site in the city, establishes a new neighborhood along the bay adjacent to downtown. Former plans failed to address the real needs of the city. The beauty

of this one is that it incorporates Mission Bay into the structure of San Francisco, seamlessly extending its physical, economic, aesthetic, and cultural life. Creating a mixed-use neighborhood of housing, retail, entertainment, and commercial-industrial properties, the plan integrates the site into the historic fabric of the city.

"Urbanistically, the plan relates to the city as a whole, establishing it's own grid and carrying it forward clearly."



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3. UrbanRiver Vision

Worcester, Mass.

Architect: Goody, Clancy & Associates

In an attempt to respond to the decaying waterfronts in many of the cities of Massachusetts, a state agency created and funded a program to provide local river-

front planning, with the input of key federal, state, and local agencies. This project addresses environmental, economic, residential, transportation, and preservation issues, so all the cities have the tools they need to address their historic waterfronts and the adjacent downtown development areas.

“Fifty years ago, the river was viewed as undesirable, but now it’s seen as the center of the community.”



4. Getting It Right: Preventing Sprawl in Coyote Valley

San Jose, Calif.

Architect: WRT/Solomon E.T.C.

Coyote Valley consists of 6,800 acres of prime farmland and watershed on the southern edge of San Jose targeted for future

commercial and residential development. An environmental advocacy group contracted this plan to show how the city can accommodate projected growth in a manner that sustains its urban economy, community, and infrastructure, promoting an alternative to sprawl.

“They took a complex problem, disassembled it, and then reassembled it with great results.”

5. The Confluence: A Conservation, Heritage, and Recreation Corridor

St. Louis

Architect: HOK Planning Group

This plan creates a 40-mile-long conservation and recreation corridor that reinforces the confluence of the Missouri and Mississippi Rivers, one of the world’s largest systems. It links St. Louis and other nearby communities to the rivers from which they rose, creating an industry of sustainable ecotourism and providing a plan for comprehensive growth in the future.

“A nationally significant park will serve as a lasting legacy to the region and to Lewis and Clark.”





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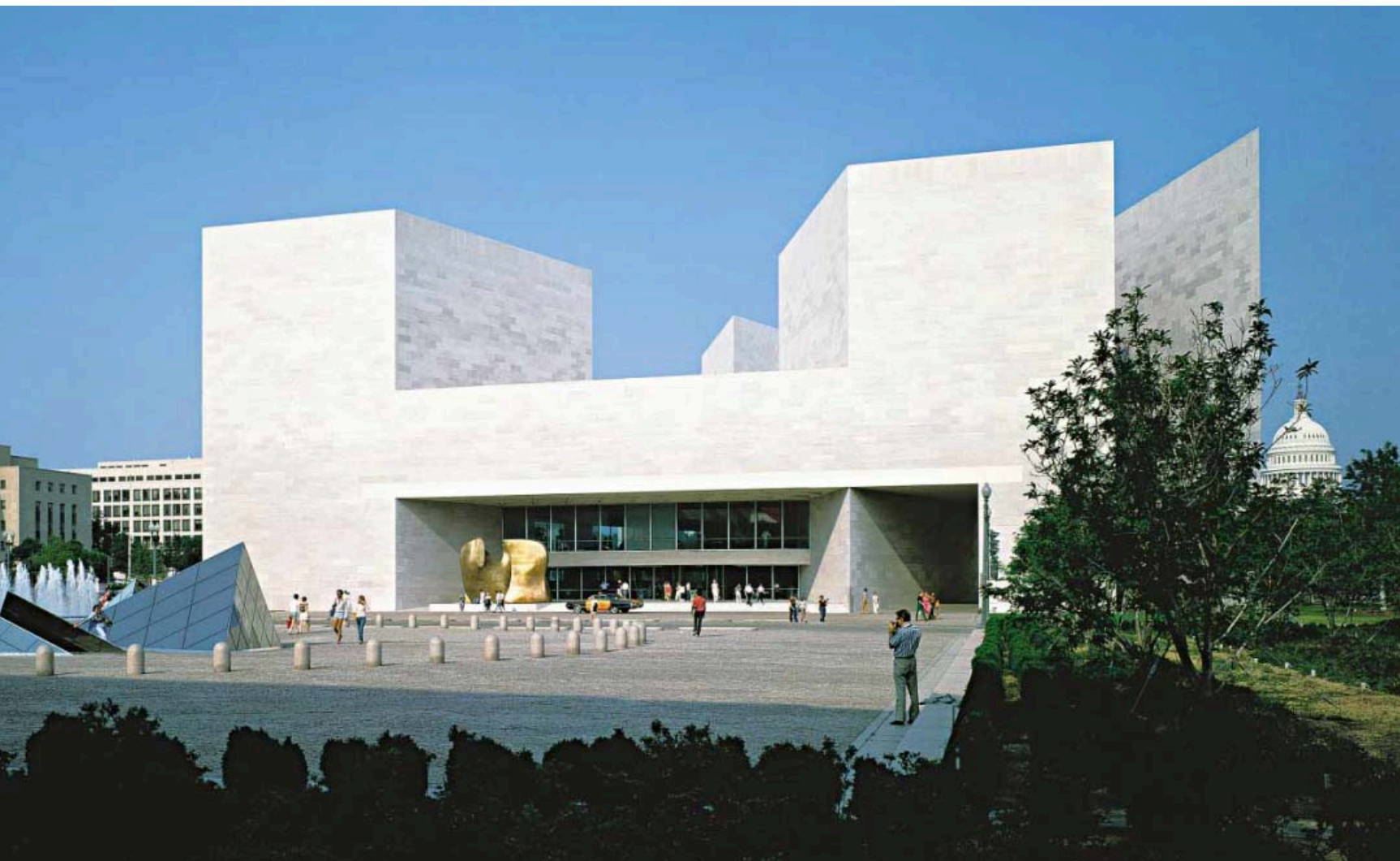
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25 YEAR AWARD



Modern masterpiece on the Mall

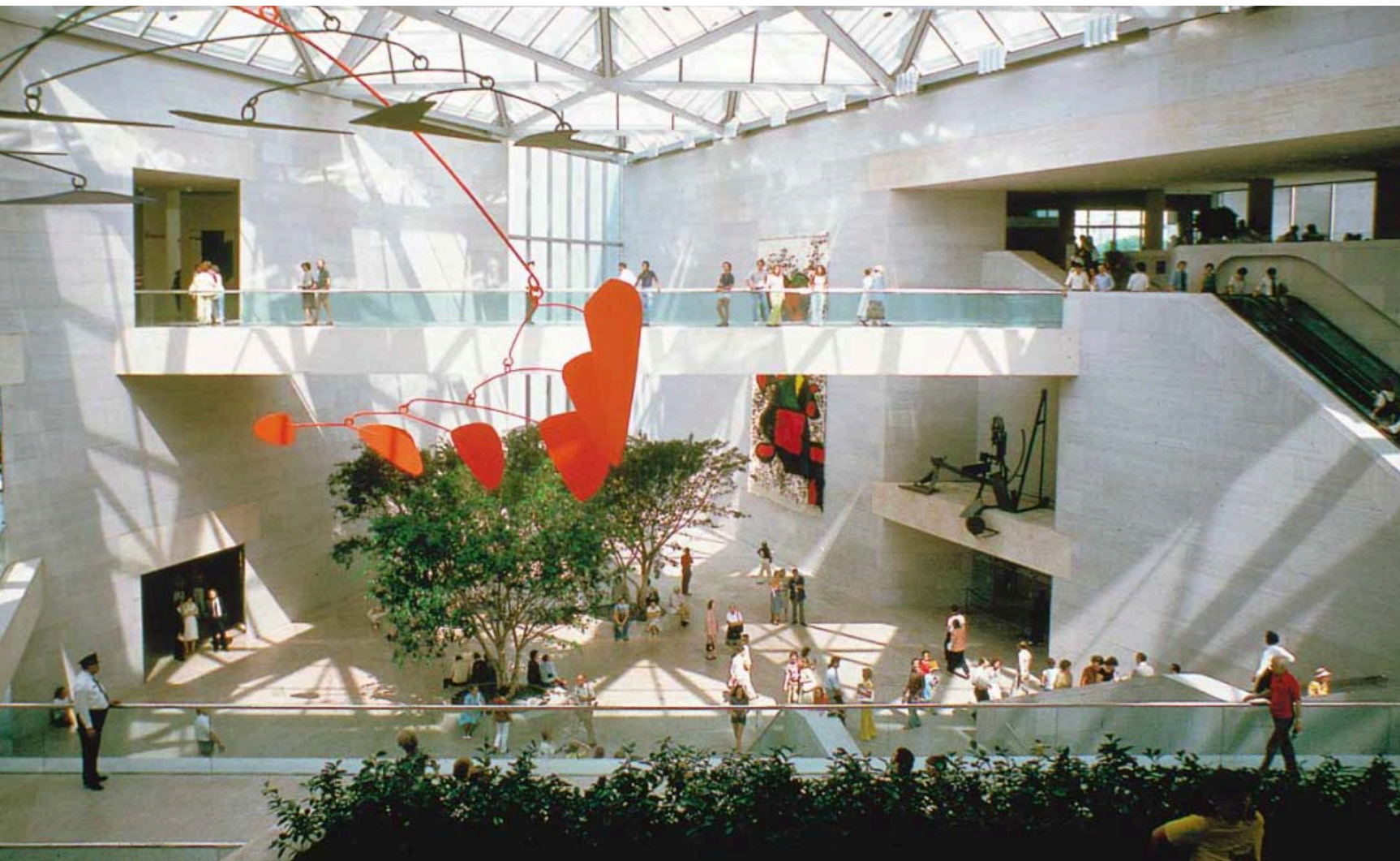


It's not easy being Modern on the National Mall, especially next to John Russell Pope's 1941 West Building of the National Gallery of Art—considered by I.M. Pei to be an exemplar of Neoclassicism. Transforming its proportions and materials into a contemporary idiom for an expansion was a stunning achievement for Pei and a gift to Washington and the nation. Ada Louise Huxtable cried “elitist” when the East Building opened, but she got it wrong. It's our capital city's Modern masterpiece—as powerful an achievement of the 20th century as the artwork it celebrates.

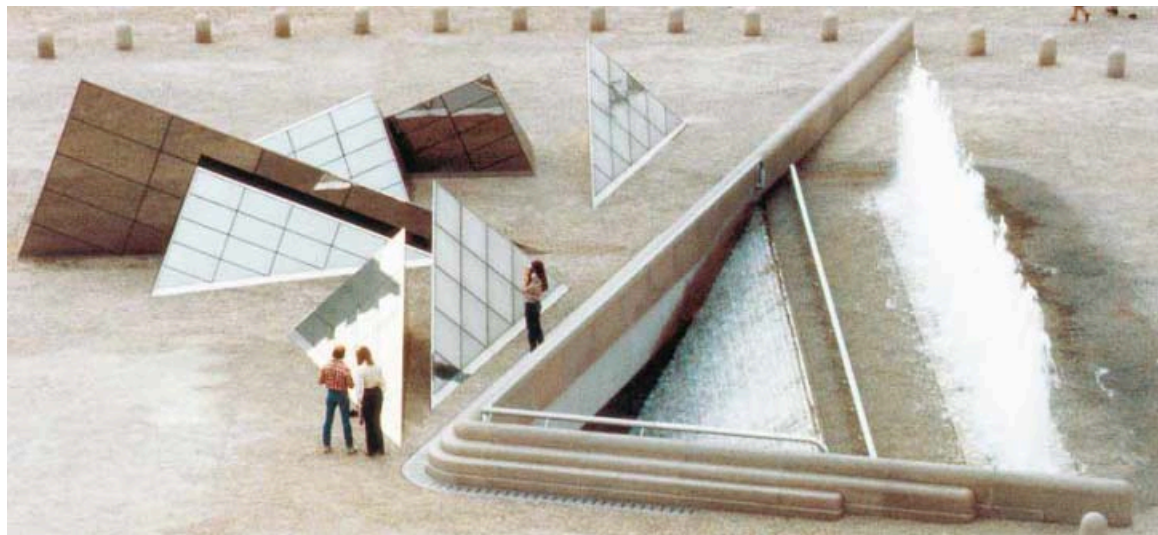
In the 26 years since President Jimmy Carter dedicated it, the East Building has thrived as an art museum while growing into eminence as an elegant, refined example of Modernism. The dual triangles, nestled within the trapezoidal site, remain programmatically intact—one for exhibitions, one for administration and research—and, unlike critics initially feared, the gallery spaces have proved highly flexible, says Victoria Newhouse, author of the forthcoming *Art/Power/Placement* (Monacelli Press). The airy atrium (“one of the most resplendent rooms of all time,” *RECORD* noted in 1978) enjoys instant

recognition, with its tetrahedron skylights that echo the geometry of the architecture, as well as Alexander Calder's colorful mobile spinning slowly overhead.

Sometimes a blemish connotes reverence. The permanent ring of discoloration surrounding Pei's name on a marble wall in the atrium owes its existence to the millions of visitors who have touched the inscription, says the NGA's director, Earl A. Powell III. The tinged stone makes explicit how indelibly Pei's identity is entwined with this well-loved project. *Deborah Snoonian, P.E.*



“This icon of contemporary architecture in a city of traditional monuments continues to delight and impress visitors from all over the world.”



American Institute of Architects

Winners and Jurors 2004

WINNERS

Architecture (page 140)

Seaside Interfaith Chapel: Merrill and Pastor Architects; **The Brain:** Olson Sundberg Kundig Allen Architects; **The Point House:** Bohlin Cywinski Jackson; **Chicken Point Cabin:** Olson Sundberg Kundig Allen Architects; **Center of Gravity Foundation Hall:** Predock Frane Architects; **Northeastern University West Campus Residence Halls:** William Rawn Associates; **Steelcase - Project MAC:** Thomas Phifer and Partners; **Salt Lake City Public Library:** Moshe Safdie and Associates; **DoMa Gallery:** W Architecture and Landscape Architecture; **Taghkanic House:** Thomas Phifer and Partners; **Los Angeles Design Center and Cisco Brothers Showroom:** John Friedman Alice Kimm Architects; **Deutsche Post:** Murphy/Jahn; **Telenor Headquarters:** NBBJ/HUS/PKA; **Skybridge at One North Halsted:** Perkins & Will; **State Street Village, ITT:** Murphy/Jahn; **Bayer:** Murphy/Jahn

Interiors (page 160)

Carol and Carl Montante Cultural Center: Cannon Design; **Pallotta TeamWorks New Headquarters:** Clive Wilkinson Architects;

New York City Public School 42, Queens, Library: Weiss/Manfredi Architects; **First Presbyterian Church of Encino:** Trevor Abramson, Abramson Teiger Architects; **NAI Exhibition - Silent Collisions:** Morphosis Retrospective: Morphosis; **Academic Center for Student Athletes at Louisiana State University:** Trahan Architects; **American Meteorological Society Editorial Offices:** Anmahian Winton Architects; **COop Editorial:** Pugh + Scarpa

Urban Design (page 168)

Chicago Central Area Plan: Skidmore, Owings & Merrill; **Mission Bay Redevelopment Plan:** Johnson Fain; **UrbanRiver Vision:** Goody, Clancy & Associates; **Getting It Right: Preventing Sprawl in Coyote Valley:** WRT/Solomon E.T.C.; **The Confluence: A Conservation, Heritage, and Recreation Corridor:** HOK Planning Group

25-Year Award (page 172)

National Gallery of Art - East Building, Washington, D.C.: I.M. Pei

Firm of the Year (page 176)

Lake/Flato Architects: David Lake, FAIA, and Ted Flato, FAIA

Gold Medal (page 184)

Samuel Mockbee, FAIA

JURORS

Architecture

Adrian Smith, FAIA (Chair), Chicago; Seth N. Cohen, Assoc. AIA, Philadelphia; Steve Dumez, AIA, New Orleans; Rand Elliott, FAIA, Oklahoma City; Roberta W. Jorgensen, FAIA, Newport Beach, Calif.; Robert D. Loversidge, Jr., FAIA, Columbus, Ohio; Cheryl McAfee, FAIA, Fayetteville, Ga.; Sarah Peden, Washington, D.C.; David Thurm, New York City

Interiors

Lee Mindel, FAIA (Chair), New York City; Annie Chu, AIA, Los Angeles; Sarah Grant-Hutchison, Des Moines; Mary L. Oehrlein, FAIA, Washington, D.C.; Arthur Smith, FAIA, Southfield, Mich.

Regional and Urban Design

Ray L. Gindroz, FAIA (Chair), Pittsburgh; George Crandall, FAIA, Portland, Ore.; Wendy Evans Joseph, FAIA, New York City; Elizabeth Chu Richter, AIA, Corpus Christi, Tex.; Susan Williams, Indianapolis

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ARCHITECTURE FIRM AWARD

LAKE | FLATO'S

desert architecture partners seamlessly with nature

This Texas firm blends Modernism, regionalism, and sustainability to create architecture that responds to the sun, the shade, and the breezes, collaborating successfully among themselves in the process.

By David Dillon



From left: Ted Flato, David Lake (seated); Kim Monroe, Greg Papay, John Grable, Karla Greer, Bob Harris, and Matt Morris (standing).

David Lake, FAIA, once described himself as a romantic and his partner, Ted Flato, FAIA, as a rationalist. “I prefer eccentricity, and he doesn’t,” he explained, to which Flato replied that he had “a great fear of doing something trendy that I won’t like after 10 years.”

Lake/Flato Architects of San Antonio, winner of this year’s American Institute of Architects Firm Award, celebrates its 20th year. That delicate balance between reason and romance, tradition and invention is intact.

The architects remain physically and imaginatively attached to Texas by virtue of what the late William Turnbull called their “specifically Texas insights,” meaning responsiveness to the imperatives of sun, heat, and wind, the challenges of a vast landscape, and the richness of local building traditions.

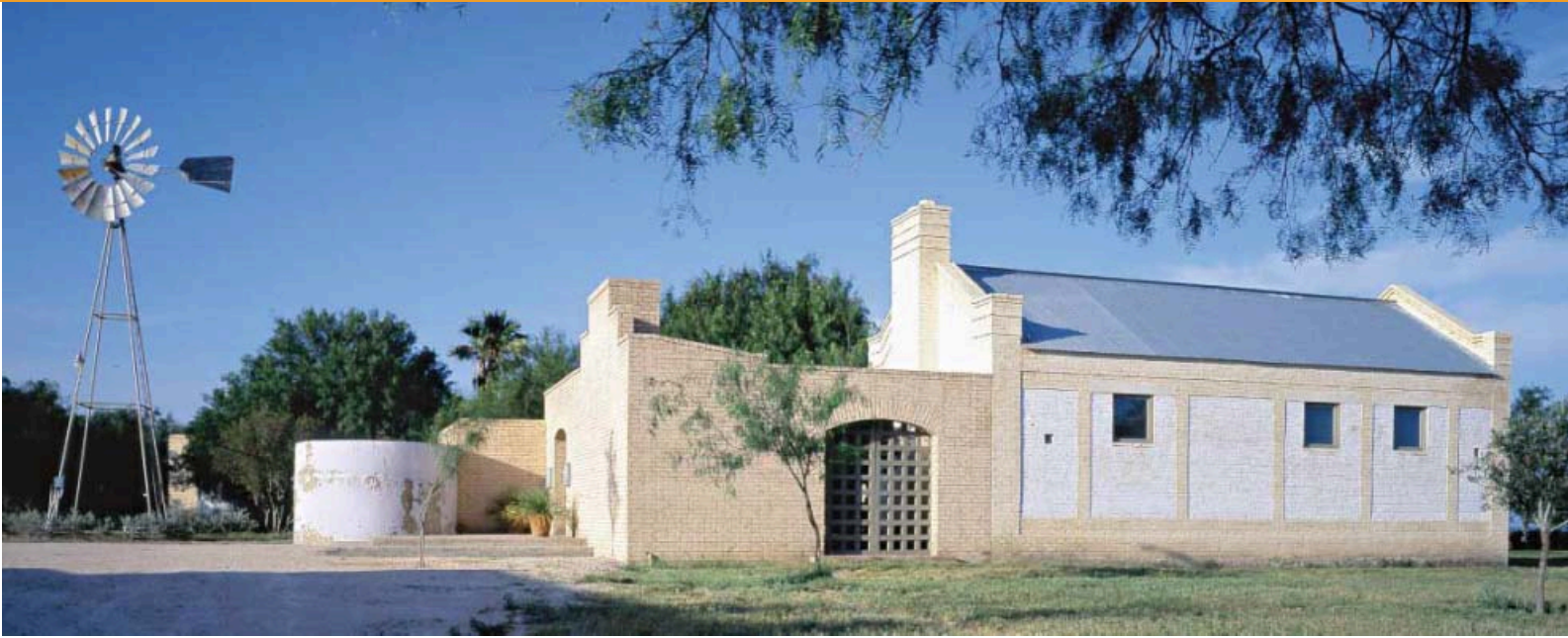
“We believe in an organic architecture that springs from its place,” says Lake, “one that acknowledges precedent and that solves basic problems simply and elegantly. I think that’s what Bill was getting at. Architecture should be comfortable and easy to live with, rather than just eye candy.”

From a familiar and unapologetically romantic base of barns, silos, stone walls, and metal roofs, their work has grown steadily more refined and abstract in ways that show how to make Modernism come to terms with history without lapsing into empty nostalgia.

In the late 1970s, Lake and Flato went to work for O’Neil Ford, the master of midcentury Texas Modernism, who taught them the importance of materials and construction, of knowing how things go together instead of how to make arbitrary shapes. “Architecture isn’t sculpture,” he’d preach.

Contributing editor David Dillon is the architecture critic for The Dallas Morning News.

PHOTOGRAPHY: © BOB MAXHAM (THIS PAGE); BLACKMON WINTERS (OPPOSITE, TOP); HESTER + HARDWAY (OPPOSITE, BOTTOM)



La Estrella Ranch House,
Roma, Texas, 1989

Carraro Residence
Kyle, Texas, 1990

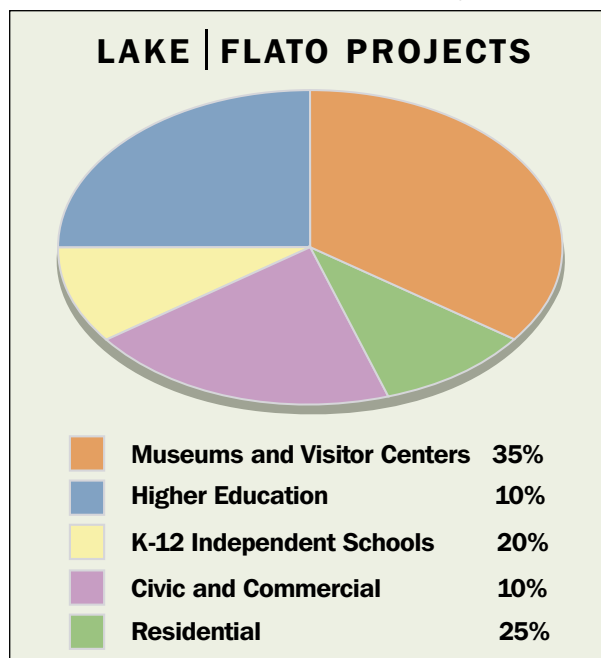


Consequently, instead of theorizing, Lake/Flato builds, or perhaps one could say they build based on theories about earth instead of air. Like their mentor's, their houses, schools, and churches are intensely sensory and tactile; the first impulse on entering them is to run your hands across walls and doors, to read the architecture through the pores.

Lake started out designing Modern sodbuster houses in the Texas Panhandle, followed by adobe houses in northern New Mexico that evoke dense historic prototypes while remaining remarkably open and bright. In the 1980s, he and Flato teamed up on a series of evocative ranch houses, mostly in South Texas, that combine simple forms and homely materials—corrugated metal, oil-field pipe, cattle fencing—to create culturally and climatically appropriate designs. The individual pieces typically form courtyards with big porches and deep overhangs that offer protection from parching Texas sun and wind.

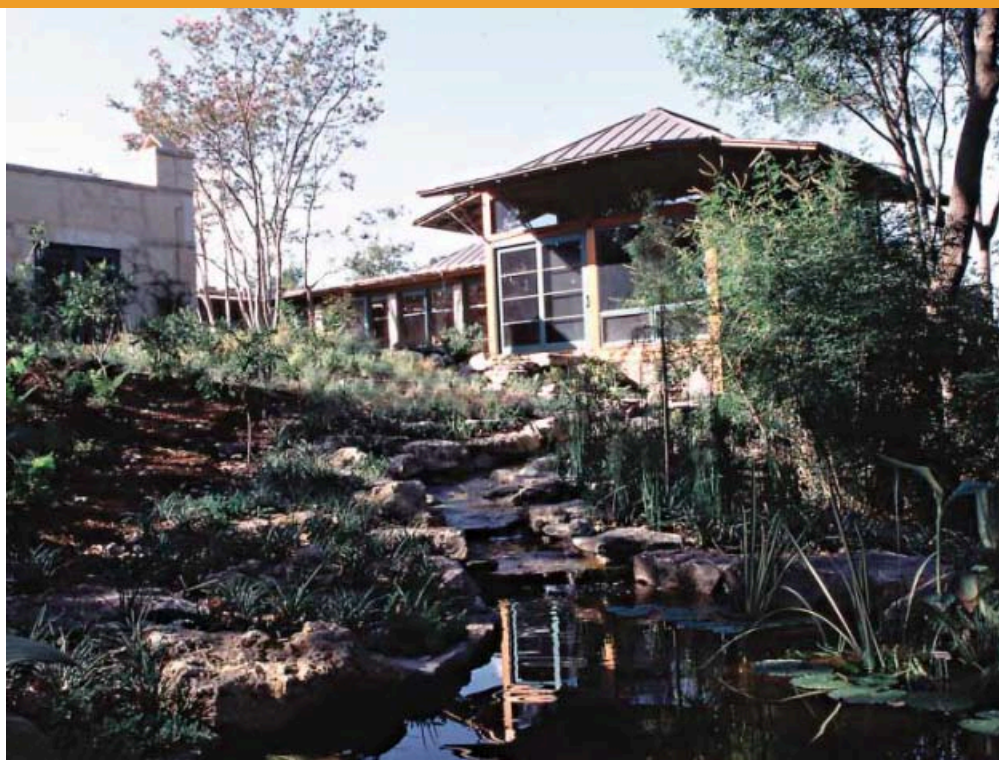
Attractive, appropriate, skillfully detailed, yet not enough to justify the Architecture Firm Award. The breakthrough came in 1990 with the Carraro residence outside Austin, an abstracted, almost skeletal version of a Texas farmhouse that uses steel salvaged from an abandoned cement plant to create a series of light, airy pavilions for living and entertaining.

"The client had this very romantic notion of a stone barn out in a field, with an old Butler building as the frame,"



recalls Flato. "We didn't want to get involved with that, so we convinced them to buy this 40-by-180-foot shed and break it into three pieces, with a little stone cube in one for the living quarters. It was a case of using the limitations of budget and the original idea to create a more interesting project."

This combination of light steel frame and heavy stone appears frequently in Lake/Flato's later work, giving the reason/romance paradigm a new tension and edginess. The Carraro house won an AIA National Honor Award, the first of three, and dramatically elevated the firm's profile.



Lasater Residence
Fort Worth, 1994



Great Northwest Branch Library
San Antonio, 1994

**Burlington Northern
Santa Fe Railroad
Headquarters**
(with KVG Gideon Toal)
Fort Worth, 1996

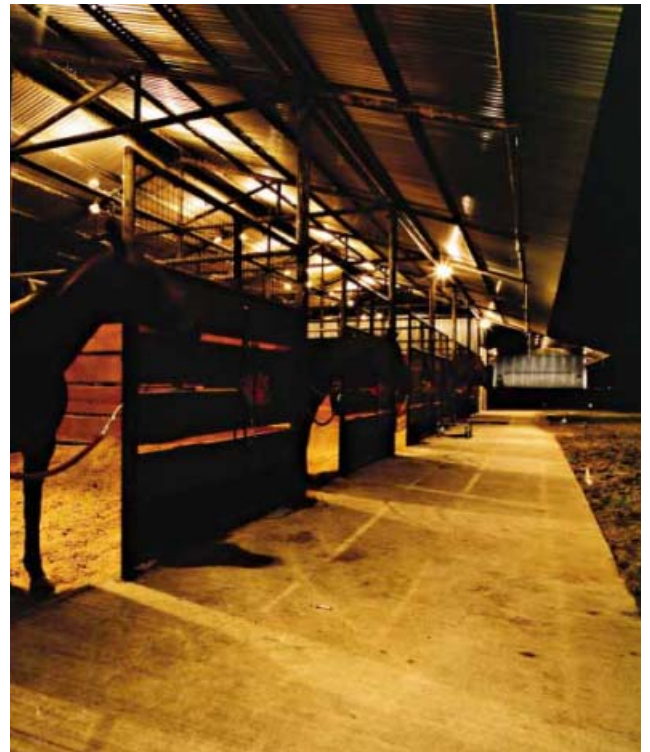


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COURTESY BURLINGTON NORTHERN SANTA FE RAILROAD (BOTTOM)



**Burlington Northern Santa Fe
Railroad Headquarters**
Fort Worth, 1996

Air Barns
San Saba, Texas, 1999



Texas State Cemetery
Austin, Texas, 1997

Lake/Flato now employs 45 people, half of them architects, who collaborate as a matter of course. This is another gift from Ford, who gave young designers extraordinary freedom and also surrounded them with a repertory company of craftsmen—masons, weavers, furniture makers, ceramicists—who softened and enriched his special brand of Modernism. The difference between real collaboration and a facsimile is the difference between bringing a covered dish to the supper and cooking together. Lake/Flato cook together.

They also get out of the studio to teach, lecture, and serve on design juries. They sponsor a residency program at the University of Texas at San Antonio and have helped the city's mayor come up with a Smart Growth Plan. A belief in good design as a public responsibility as well as a private passion lies at the heart of their practice. As the firm has expanded, so has the range and complexity of

“THE FIRST IMPULSE ON ENTERING THEIR HOUSES, SCHOOLS, AND CHURCHES IS TO RUN YOUR HANDS ACROSS WALLS AND DOORS.”

its projects. In the past decade, Lake/Flato has designed museums, churches, libraries, and corporate headquarters, along with a cemetery, a botanical garden, and a school of nursing.

Scale remains their ally and occasionally their albatross. The sprawling Burlington Northern Santa Fe headquarters in Fort Worth (with KVG Gideon Toal), for example, gets a bit heavy-handed in its evocation of the railroad vernacular. Likewise, the SBC Center, home of the San Antonio Spurs basketball team, is festooned with structural Texana that comes across as forced rather than inevitable. Understatement is their game.

Considerably more successful is the Trammell Crow Visitor Pavilion at the Dallas Arboretum, which opened in 2003 and in many respects epitomizes their earlier work. Here, rugged Texas limestone walls meet light steel and glass pavilions to form a small village with an open central plaza. The pavilions are contemporary abstractions of traditional barns and sheds, their appeal residing in the intimate scale and honest craftsmanship, rather than in bold architectural gestures. And the entire project blends seamlessly with its natural surroundings, enhancing rather than overwhelming them.

The new University of Texas School of Nursing in Houston is Lake/Flato's most ambitious exercise yet in sustainable design. Using 50 percent recycled materials and consuming 40 percent less energy, the building attains a LEED Gold rating without compromising architectural integrity or turning technology into a fetish.

Economy, pragmatism, simplicity, comfort without pretension, elegance without irony, these features distinguish Lake/Flato's best work. Their architecture shows respect for materials and construction, for the values of place and precedent and the needs and aspirations of its users. ■



Hotel San Jose
Austin, Texas, 2000

Agudas Achim Synagogue
Austin, Texas, 2001





Harry Ransom Center
Austin, Texas, 2003



**University of Texas School
of Nursing and Student
Community Center**
Houston, 2004

PHOTOGRAPHY: © HESTER + HARDWAY (TOP LEFT); GERALD MOORHEAD, FAIA (TOP RIGHT); TIMOTHY HURSLEY (BOTTOM)

**Trammell Crow Visitor
Education Pavilion at the
Dallas Arboretum and
Botanical Society**
Dallas, 2000





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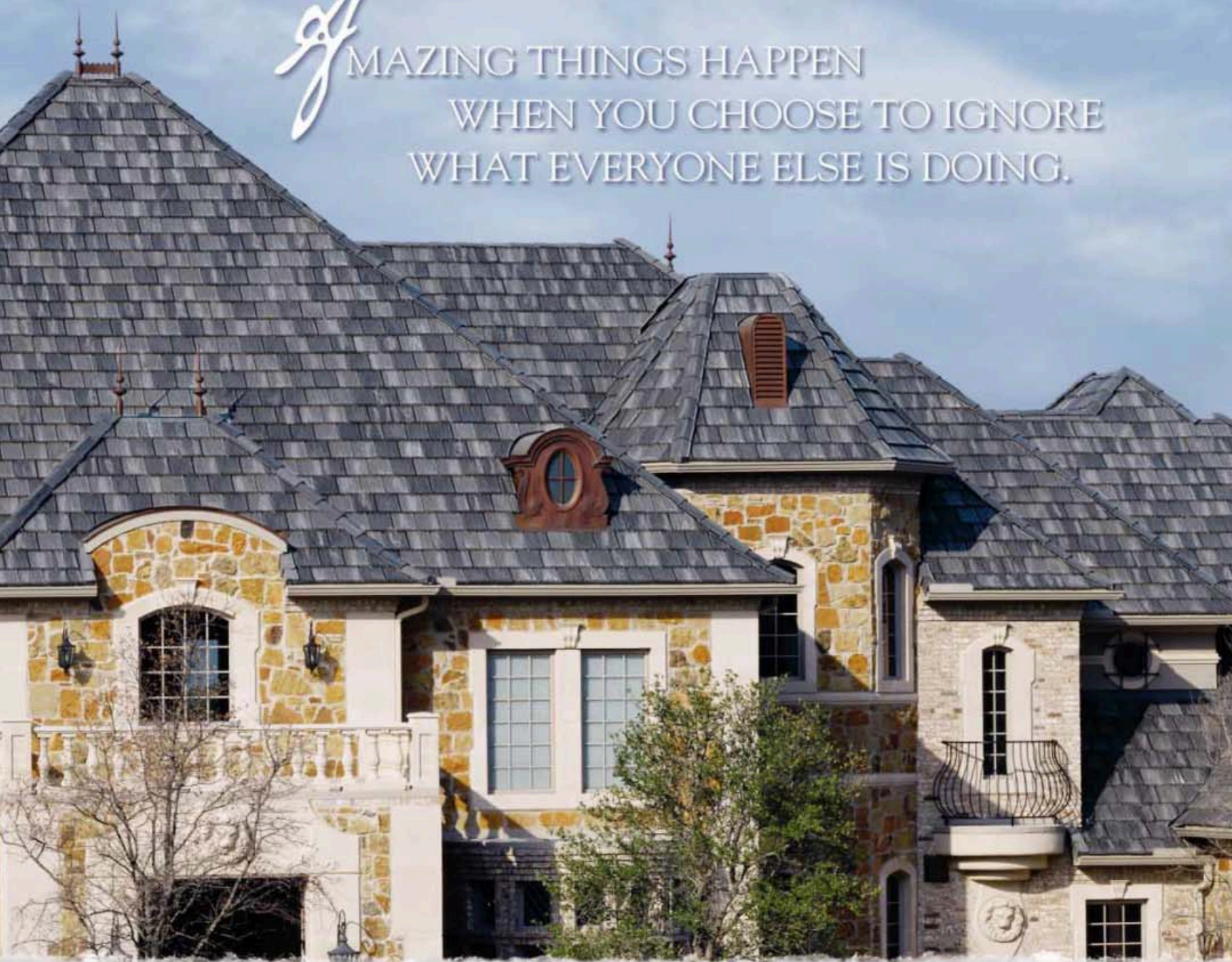
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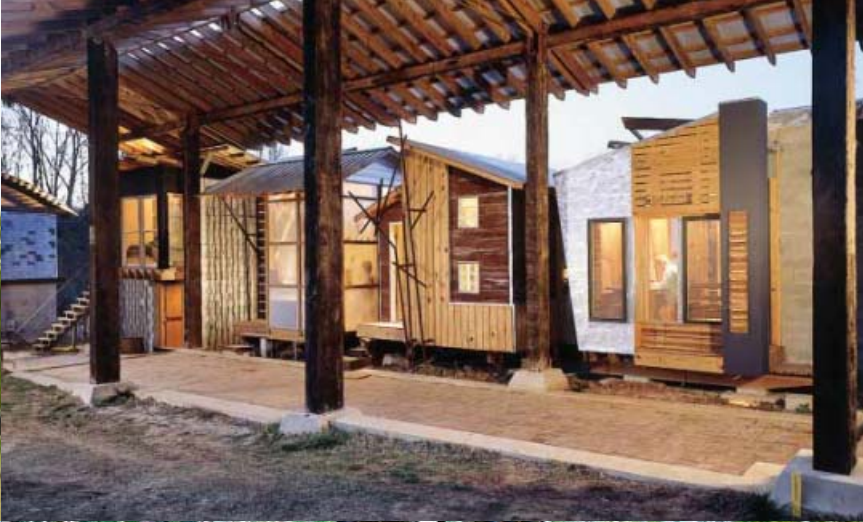
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Samuel Mockbee: A life's work

AIA GOLD MEDAL WINNER



PHOTOGRAPHY: MOCKBEE PORTRAITS COURTESY JEFF ETHERIDGE

Before there was a Rural Studio, there was an architect named Sambo. He grew up in the heady milieu of Mississippi, a place redolent of earth and growing things, of social disparity, and great literature. Coming of age during the contentious 1960s, Sambo absorbed the world surrounding Meridian, Mississippi, played football, attended Auburn University, and joined the army. Then his worldview shifted.

After a stint working in Georgia, he returned to Mississippi, where, in conjunction with a series of partners, he began to make architecture suited to the geography and culture of the nation's poorest state. Using the simplest materials and familiar forms, he wrested newness from a people struggling to emerge from a rich but historically oppressive past. Great writers from William Faulkner to Walker Percy had succeeded in moving on; uniquely, Sambo took architecture to a new Southern frontier.

While early projects smacked of Postmodernism, very quickly a bevy of buildings, from houses to simple chapels, proclaimed a refreshed, empathetic sensibility. Soon Sambo & Company were redefining what it meant to live and work in the South. Publications took notice, as did the universities.

Ultimately, he found his full voice through other people, particularly at Auburn's Rural Studio, where he and collaborator D.K. Ruth cofounded a residential architectural program that offered a total immersion in the art of building, engaging all of the arts in the service of a specific community. That work continues to flourish to this day.

In naming Mockbee as the 2004 Gold Medalist, the American Institute of Architects not only recognized his gifts, but also espoused Sambo's values, which fiercely and unsentimentally addressed basic human needs. *Robert Ivy, FAIA*



A 1927 Neoclassical service station called the Shady Nook, in Jackson, Miss., became the first office of Goodman and Mockbee, 1979. Mockbee is pictured with contractors; he's in the middle in a sports jacket.

By Andrea Oppenheimer Dean

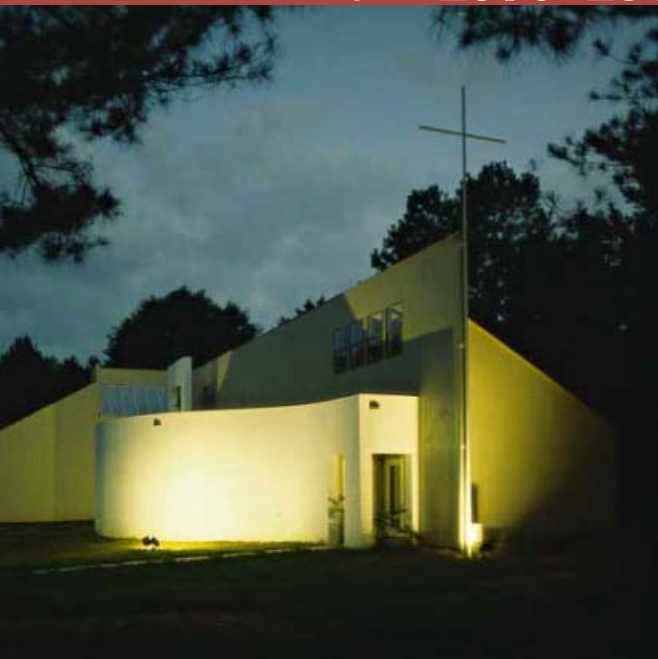
Both Samuel Mockbee and Frank Lloyd Wright often tongue-lashed their profession. Wright once called architects “high-grade salesmen”; Mockbee labeled them “house pets to the rich.” Yet the American architectural establishment conferred its highest honor, the AIA Gold Medal, on both Wright and Mockbee. That’s not all they had in common: Both were charismatic teachers who pried open the minds of their students with evocative stories and practical lessons instead of dry theory. Wright spoke of Taliesin in Wisconsin as having “simply shaken itself out of my

sleeve.” Mockbee told his students at the Rural Studio in southwest Alabama—often called Redneck Taliesin—“screw the theory; choose the more beautiful.”

But the comparison pretty much ends there. Wright, a surpassing egotist, saw himself as the Welch magician and bard Taliesin and gathered apprentices in rural Wisconsin for his own greater good. Mockbee, humble and unassuming, wanted to do good for others. Wright was domineering, while Mockbee applied a light touch, cautioning students that goodness was more important than greatness, compassion more eventful than passion. Wright was the elegant, autocratic Mr. Wright. Mockbee, a bearish, bearded, sixth-generation Mississippian, was an egalitarian and a populist who preferred being called Sambo and drove around Hale

Andrea Oppenheimer Dean is a RECORD contributing editor and author with Timothy Hursley of Rural Studio: Samuel Mockbee and an Architecture of Decency (2002).

THE EARLY WORK 1970–1980s



1



2

1. Christ Community Church, Clinton, Miss., Goodman and Mockbee, 1979.

2. Presidential Hills Presbyterian Church, Jackson, Miss., Goodman and Mockbee, 1980.

3. Model of Charity Houses, Madison County, Miss., P/A Award submission, Mockbee Coker Howorth Architects, 1986–87 (not built).

4. Model of the Flautt House, Greenwood, Miss., Mockbee Coker Howorth Architects, 1987 (not built).



3



4

County, the Rural Studio's home, in a beat-up red pickup, wearing old clothes and an Auburn University baseball cap. He viewed himself as an iconoclast and a subversive. The same, of course, was true of Wright.

Mockbee was convinced that "everyone, rich or poor, deserves a shelter for the soul" and that architects should lead in procuring social and environmental change. But he believed they had lost their moral compass. The profession

MOCKBEE OFTEN TONGUE-LASHED THE PROFESSION, LABELING ARCHITECTS "HOUSE PETS TO THE RICH."

needed reform, he believed, and education was the place to start. "If architecture is going to nudge, cajole, and inspire a community to challenge the status quo into

making responsible changes, it will take the subversive leadership of academics and practitioners who keep reminding students of the profession's responsibilities," he said. He wanted to get students away from the academic classroom into what he called the classroom of the community.

In a letter nominating Mockbee for the 2004 Gold Medal, Frank Gehry, FAIA, wrote, "There have been few programs as radical as the Rural Studio in helping students to believe in their role for the future." Peter Eisenman, FAIA, commended the studio for stressing "the ethical dimension of building." Michael Rotondi, FAIA, wrote, "Mockbee represents all that we aspire to be as individuals and as a profession."



Sambo teaching at the Rural Studio in Greensboro, Ala., 2000.



5

5. Tractor shed at Flautt House, Greenwood, Miss., Mockbee Coker Howorth Architects, 1988.

6. McGee Church, McGee, Miss., Mockbee Coker Howorth Architects, 1989.

7. National Center for Physical Acoustics, University of Mississippi, Ole, Miss., Mockbee Coker Howorth Architects, with HLW, 1989.



7

6





Traveling exhibition, Soviet Union, joint venture of Mockbee Coker Howorth Architects and Communication Arts, 1988–1991.

Mockbee's ideas and his aesthetic evolved while he was in private practice, first in a partnership he formed with Thomas Goodman in 1977, then with Coleman Coker in 1983. He described his architecture as contemporary Modernism grounded in Southern culture and drew inspiration from such vernacular sources as overhanging galva-

Mississippi, Barton House (a 1992 Record Houses Award winner) and his Oxford, Mississippi, Cook House (a 1995 AIA National Honor Award winner).

By the early 1980s, convinced that addressing problems and trying to correct them is "the role an artist or architect should play," Mockbee sought opportunities to follow Leon Battista

Alberti's injunction that the architect must "choose between fortune and virtue."

In 1982, he helped a Catholic nun move and renovate con-

MOCKBEE, A BEARISH, BEARDED, SIXTH-GENERATION MISSISSIPPIAN, DROVE IN A BEAT-UP RED PICKUP.

demned roofs, rusting metal trailers, dogtrot forms, and porches. "I'm drawn to anything that has a quirkiness to it, a mystery to it," Mockbee said. His designs tended toward asymmetry and idiosyncrasy, as seen, for example, in his Madison County,

Mississippi, and then built his first "charity house" there for \$7,000, using donated and salvaged materials and volunteer labor—a model for the Rural Studio. In 1987, his firm won a 1982 P/A Award for

1988–1991



8

8. Cook House, Oxford, Miss., Mockbee Coker Howorth Architects, 1991.

9. Barton House, Mockbee Coker Howorth Architects, Madison County, Miss., 1991.



9

PHOTOGRAPHY: © HAP OWEN (TOP); MOCKBEE COKER HOWORTH (OPPOSITE, TOP); TIMOTHY HURSLEY (8, 9, 10)

three prototype dogtrot-type charity houses but was unable to get a construction grant to build them. Hoping to convey to possible patrons the reality of poor people (“like you and me, only poor”), Mockbee painted strong portraits in oil of some of his indigent clients. The final piece for the Rural Studio fell into place in 1990 when Mockbee visited Clemson University’s architecture program in Genoa, Italy.

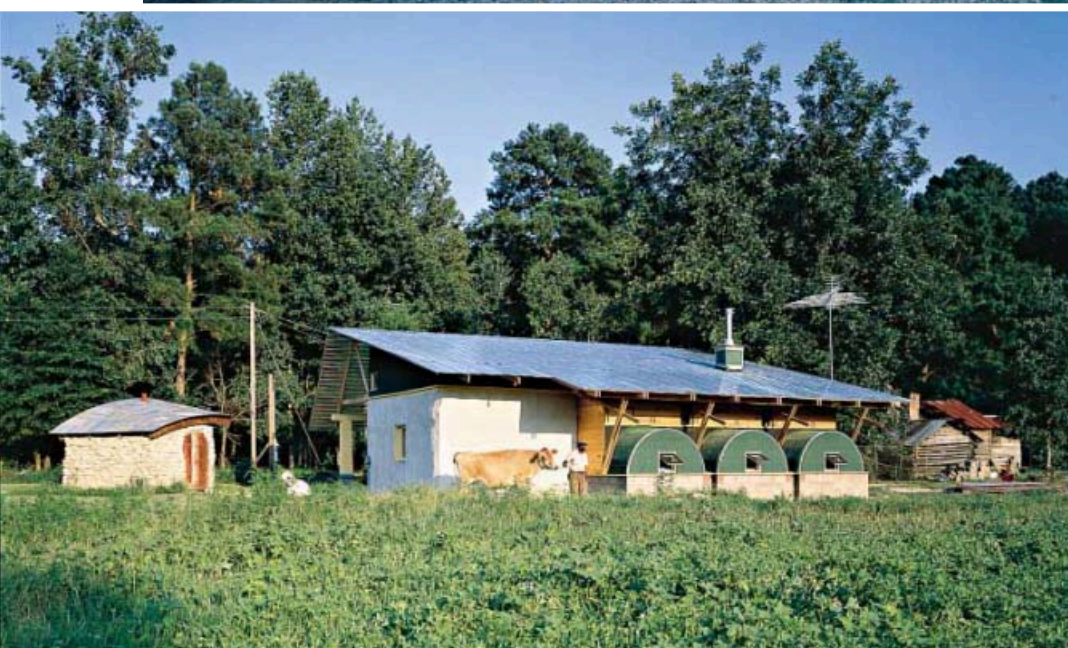
In 1992, Mockbee, together with Auburn architecture professor D.K. Ruth, founded the Rural Studio, which Mockbee directed until his death in late 2001. But instead of planting Auburn’s study-abroad program in a foreign country, they rooted it in the hollows and flat fields of Alabama’s second-poorest county, Hale. Mockbee was drawn there partly because

of the poverty: The residents obviously needed help, and coming to Hale would force students to test their abstract notions about poverty by “crossing over into that other world, smelling it, feeling it, experiencing it,” he said. He was also attracted by the isolation, which, combined with Mockbee’s prohibition of television, would concentrate students’ minds on their building projects. Students would also be exposed to the region’s architectural history, read its literary giants, and absorb Mockbee’s lectures on responsibility, fairness, and decency.

Each semester, the Rural Studio brought about 15 second-year students to Hale County to help design and build a house. Fifth-year students stayed for a year, working on a community building, their thesis project. Two years before



Sambo working on the tractor shed, Flautt House, Greenwood, Miss., Mockbee Coker Howorth Architects, 1988.



10

10. Bryant (Hay Bale) House, Mason's Bend, Ala., Rural Studio, 1994.



Sambo with the Harris family, Mason's Bend, Ala., Rural Studio, 1997.

Mockbee's death, the studio launched an outreach program, accepting a handful of students from other universities and other disciplines to undertake a variety of design and social-work assignments.

Mockbee's Rural Studio represented a vision of architecture that embraced not only practical architectural education and social welfare but also the use of salvaged, recycled, and curious materials and an aesthetics of place. "I want to be over the edge, environmentally, aesthetically, and technically," Mockbee said. His students used hay bales to build walls for the studio's first house, worn-out tires for the walls of a chapel, salvaged Chevy Caprice windshields for the roof of a community center, and waste corrugated cardboard for a one-room dwelling. Transmuting ordinary materials into

extraordinary objects, the studio's buildings were obvious relatives of those Mockbee designed for his private clients.

For his work at the Rural Studio, Sambo Mockbee was awarded the National Building Museum's first Apgar Award for Excellence in 1998, and in 2000, he won a MacArthur "genius" grant.

The influence of the Rural Studio is hard to quantify. Daniel Friedman, FAIA, dean of the University of Illinois, Chicago's architecture program, says it has changed architectural education. Bill Carpenter, author of *Learning by Building: Design and Construction in Architectural Education*, observes that in 1992 there were eight or 10 university-based design-build programs, while today there are 30 or 40. He says, "a lot of it [the increase] had to do with Sambo." The

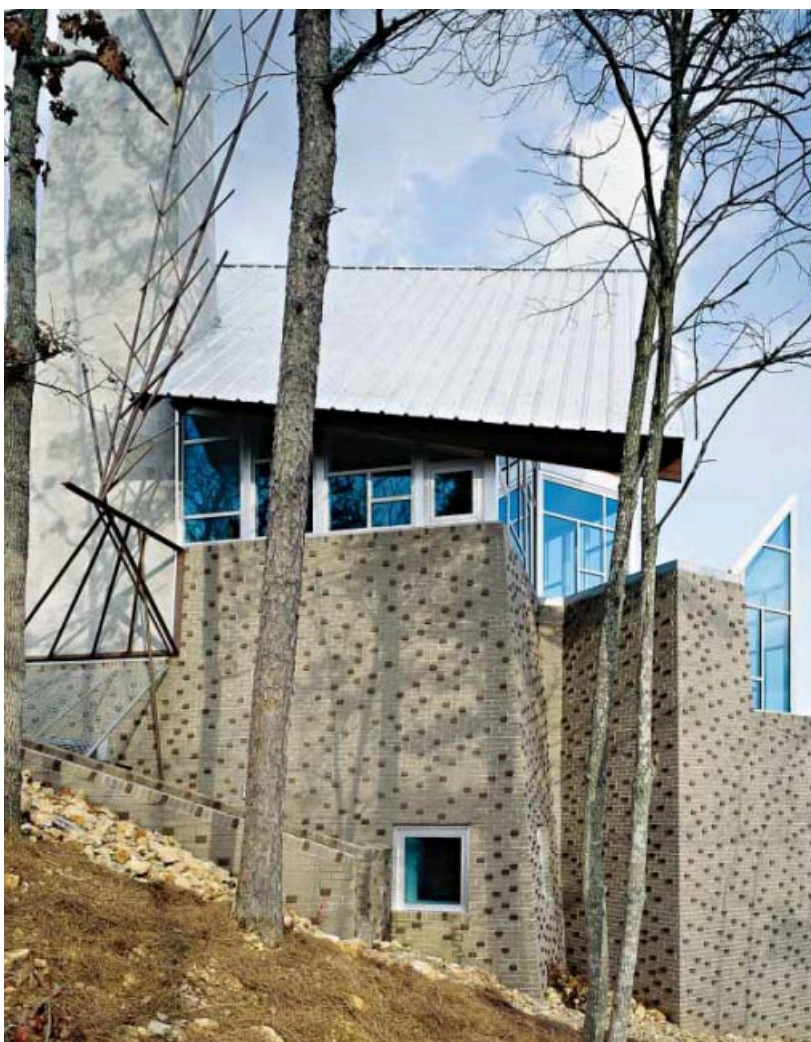
1990–2001



11

11. Yancey Chapel, Sawyerville, Hale County, Ala., Rural Studio, 1995.

12. House on Tennessee River, Shiloh Falls, Tenn., Mockbee/Coker Architects, 1997.



12

PHOTOGRAPHY: © TIMOTHY HURSLEY (TOP AND OPPOSITE, TOP; 11, 12, 13, 14)

charismatic Mockbee and his Rural Studio were featured on network television, including *CBS This Morning* and in numerous national magazines. “It was the first time the public was captivated by an architectural model,” Carpenter says.

MOCKBEE TOLD HIS STUDENTS, “SCREW THE THEORY; CHOOSE THE MORE BEAUTIFUL.”

Another influence, he says, is graduates—about 450 by now. Many become purveyors of the Rural Studio’s approach.

After a founder’s death, ventures like the Rural Studio rarely flourish. Much of Taliesin’s vitality and creativity, for instance, died with Wright.

I am pleased to report, however, that Mockbee’s baby thrives, a tribute to his

ideas. The studio isn’t quite the same and isn’t without criticism, including from within. “I suspect Sambo would just think it was different and regret being dead and not being there,” David Buege, a professor of architecture at Mississippi State

University and a friend of Mockbee’s, told me. Mockbee understood change and welcomed it. He created the studio as a moving target.

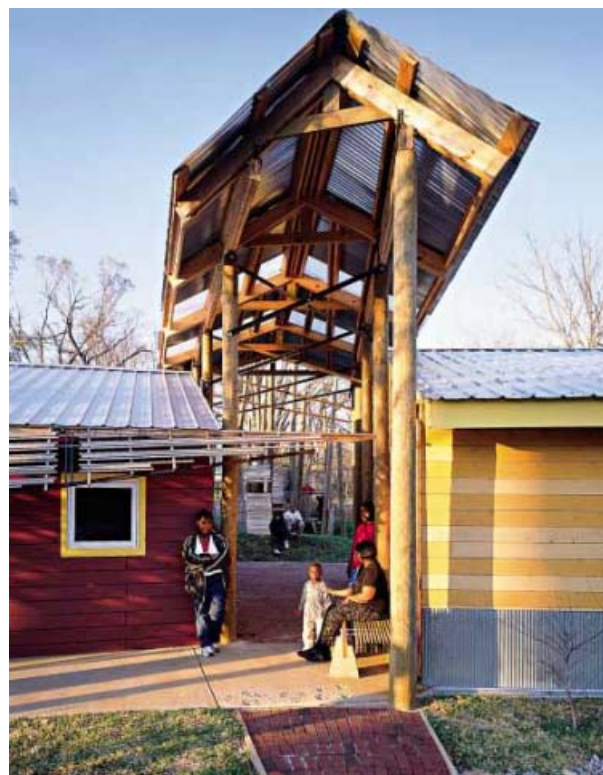
There was almost no transition period, Buege recalls, and there was never a doubt about who should succeed Mockbee. At the time of Mockbee’s death, 34-year-old Andrew Freear, a native of Yorkshire, England, and a product of London’s Architectural Association, taught the fifth-year program. “Sambo and I were good together,” Freear says. “I was a



**Interior of Harris (Butterfly) House,
Mason’s Bend, Ala., Rural Studio 1997.**



13



14

**13. Harris (Butterfly) House, Mason’s
Bend, Ala., Rural Studio, 1997.**

**14. Hero Children’s Center,
Greensboro, Hale County, Ala.,
Rural Studio, 1999.**



Detail of one of the Pods (note wall made of license plates), Newbern, Ala., Rural Studio. 1997–2001.

sort of utilitarian socialist and he was the artist who said make it pretty.”

Freear was the obvious successor—the only person, really, who could take over. The studio formed ranks behind him, and Freear carried on, adopting one of Mockbee’s slogans, “Proceed and Be Bold.”

Freear is “a bulldog,” says Buege. “Andrew is smart, brash, ambitious, always on the edge, often over-the-top,

assertive about not being Sambo and the Rural Studio being more than Sambo.”

David Hinson, an Auburn associate professor of architecture, adds that Freear has many of the same strengths as Mockbee: Freear lets students realize themselves, has a pragmatism combined with poetry, doesn’t entertain long discussions grounded in abstractions, is kind, and has a penchant for the outrageous. Shortly after Mockbee’s death, Auburn committed \$400,000 a year to the studio, endowing it with stability for the first time, and in 2002, Freear was appointed codirector of the studio, with Bruce Lindsey, head of Auburn’s School of Architecture. Freear, however, continues a laser concentration on fifth-year projects, and during his watch

THE INFLUENCE OF THE RURAL STUDIO HAS CHANGED ARCHITECTURAL EDUCATION.

disciplined, deeply committed, self-confident. Someone without that confidence might well have failed. He’s very respectful of Sambo and his legacy, but he’s

1997–2002



15



16

15. Mason’s Bend Community Center, Mason’s Bend, Ala., Rural Studio, 2000.

16. Supershed and Pods (left, interior of Cardboard House), Newbern, Ala., Rural Studio, 1997–2001.

the studio's focus has shifted more emphatically from the rural house to community-oriented buildings.

At the same time, the Rural Studio's community buildings have grown larger, more complex, more socially significant, and more numerous. During the early years, students built one house and, at most, two modest community buildings a year. In the two years following Mockbee's death, the studio completed 17 projects. Lindsey thinks that tackling so many assignments at once might have been "a bit of therapy for dealing with the loss of Sambo." Perhaps Freear, new and young, needed to prove something about the studio without Mockbee, and about himself.

The year Mockbee died, the studio was working on a house plus five

community projects: the Antioch Baptist Church in the countryside about 25 miles northeast of Newbern, the studio's base; a senior center in Akron, 25 miles west of Newbern; a storefront in downtown Greensboro, the county seat; and in Perry County, Hale's neighbor to the west, the studio completed a pavilion in the newly reopened Perry Lakes Park. In addition, a group of outreach students reinterpreted and built one of Mockbee's last designs, called Lucy's House for its owner.

Freear says that if the Rural Studio has changed, "it's because I said we can make the craft better. I want to have high expectations for the students and the client. If we're going to make a glass box [as at the Thomaston Rural Heritage Center], the finish is going to be fantastic." Freear has also honed the



Lucy and Anderson Harris (standing) and son A.J. (seated) at Lucy's House, Mason's Bend, Ala., Rural Studio, 2002.



17

17. Lucy's House, Mason's Bend, Ala. (note walls made of carpet samples), Rural Studio, designed 2001, completed in 2002 (after Mockbee's death).





Mockbee in his painting studio in Newbern in the summer of 2001 seated before *The Children of Eutaw Pose Before Their Ancient Cabins*, 1992.

programming of buildings and has encouraged communities to find their own funding, believing that if they provide payment they are more likely to take ownership. Fifth-year students once

“I’M DRAWN TO ANYTHING THAT HAS A QUIRKINESS TO IT, A MYSTERY TO IT,” MOCKBEE SAID.

chose their own projects, but now community leaders come to the studio seeking design and construction help. As a result, students have become more engaged with town and county leaders.

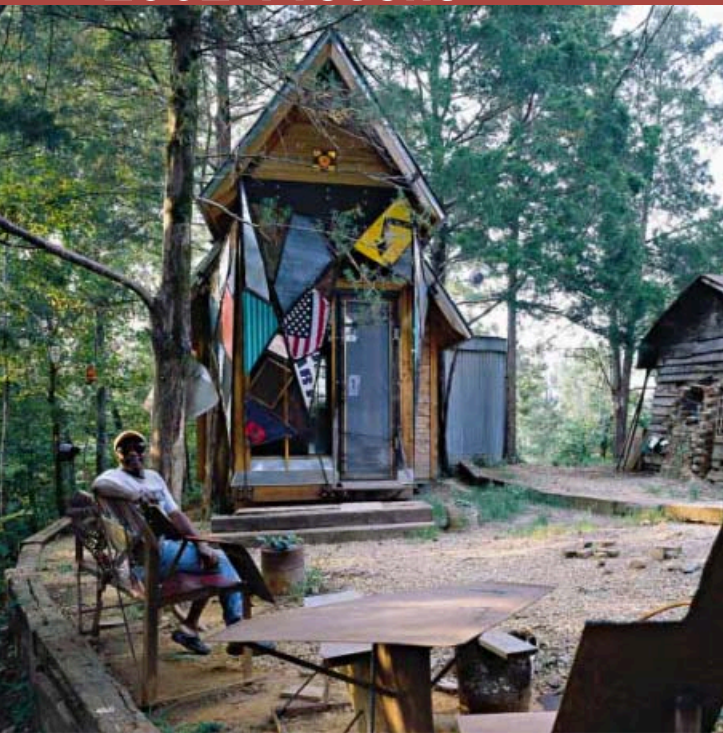
Freeear’s stress on craftsmanship has led him away from Mockbee’s tendency toward improvisation and letting design evolve during construction. Freeear insists on getting things right first.

Drawing, he says, saves time on-site and creates better communication among team members and between the team and the client. “Design-build should not be a series of responses to screwups made earlier in the project,” he says. “I believe in precision, not artfully camouflaged sloppiness.” But ratcheting up the level of craft has stretched out sched-

ules. At the end of the academic year 2002–2003, three of four thesis projects remained unfinished; that summer and fall graduates returned to finish their work, on their own penny.

Another change, since 2001, has been increased use of steel in construction. John Forney, the outreach program professor, worries that the students may lose out, because steel requires

2002–Present



18

18. Music Man’s House (Jimmy Lee Matthews), Greensboro, Hale County, Ala., 2002–2003.



PHOTOGRAPHY: © TIMOTHY HURSLEY (TOP; 18)



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Red Barn, Newbern Design Studio, where Rural Studio currently works, Newbern, Ala., Rural Studio, 2004.

fabrication by professionals. The problem solved itself: In 2004, students rejected the steel and glass of the past two years. “The students don’t want to do something that’s already been done, and they saw how much of the construction

scrappy materials would seem to go hand-in-hand with raising the bar.

As materials have changed, so has appearance. The Rural Studio’s buildings under Mockbee were known for their striking angles, winged roofs, and wacky details. The new thesis projects, some of which are stunning, tend toward a more neutral, Minimal Modernism,

THE STUDENTS CROSSED A THRESHOLD TO A PREVIOUSLY FEARED AND UNFAMILIAR WORLD.

process was taken out of their hands last year and the year before,” Freear says.

The thesis projects completed under Freear use some recycled materials, but you’ll find no hay bales, no waste corrugated cardboard, no windshields. He is more interested in durable buildings that require minimal maintenance. A decline in the use of unconventional,

a vocabulary that wasn’t Mockbee’s.

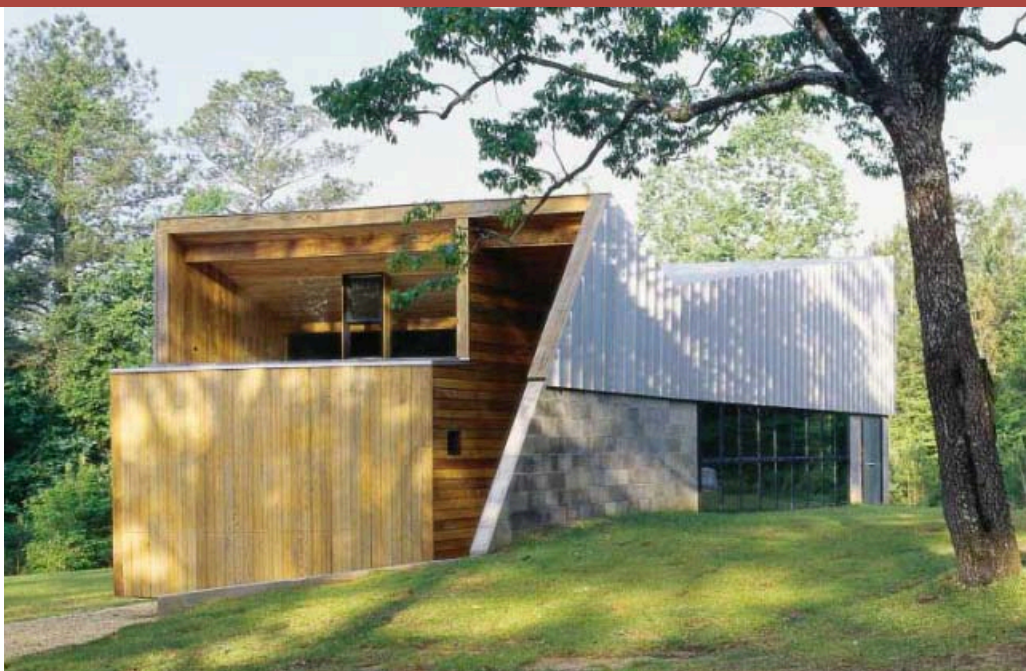
Remember, however, these are not Freear’s buildings. The students react to Freear’s critiques and may unconsciously absorb his preferences, but the students were always the authors, and that’s still the case. Freear says he and his students engage in few conversations about how things look. “We talk about

2002–Present



19

19. Antioch Baptist Church, Perry County, Ala., Rural Studio, 2002.



PHOTOGRAPHY: © TIMOTHY HURSLEY (TOP); ELLIOTT KAUFMAN (19)



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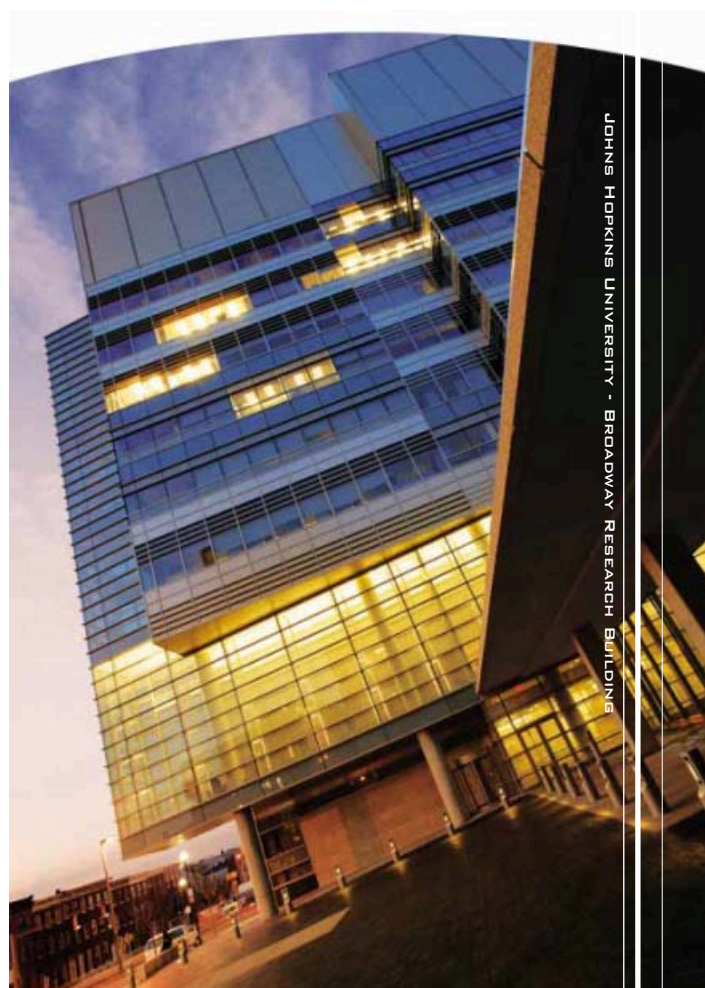
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Andrew Freer (seated) with Rural Studio thesis students. Red Barn, Newbern Design Studio, Newbern Ala., 2004.

materials and the sustainability of materials, that our clients have no money or time to paint, that we shouldn't use a metal that's going to rust."

Unlike the community buildings, which show an ever-increasing level of sophistication, the outreach program still produces projects with Mockbee-era quirkiness. One example is Cynthia

FREEAR CARRIED ON WITH THE RURAL STUDIO, ADOPTING ONE OF MOCKBEE'S SLOGANS, "PROCEED AND BE BOLD."

Connolly's organic vegetable stand of 2003, which has movable walls of hog-wire, a patchwork of chicken wire and assorted metal leftovers. John Forney, the program's instructor, has tried to avoid

what he characterizes as the "death march struggles" of the fifth-year projects.

Mockbee's expressive yet relaxed approach also lives on in the houses designed and built by the second-year program, which has changed much less than the fifth-year program. The first house completed since Mockbee's death, Tracy Shiles's house of 2002, suffers from an overabundance of ideas, forms, materials, and finishes, but the second, completed in 2003, for Jimmy Lee Matthews, aka Music Man, returned the studio to its roots. As with the studio's first house for Shepard and Alberta Bryant, middle-class white students and an impoverished black client worked closely together. They bonded, and the students crossed a threshold to enter a previously

2002–Present



20



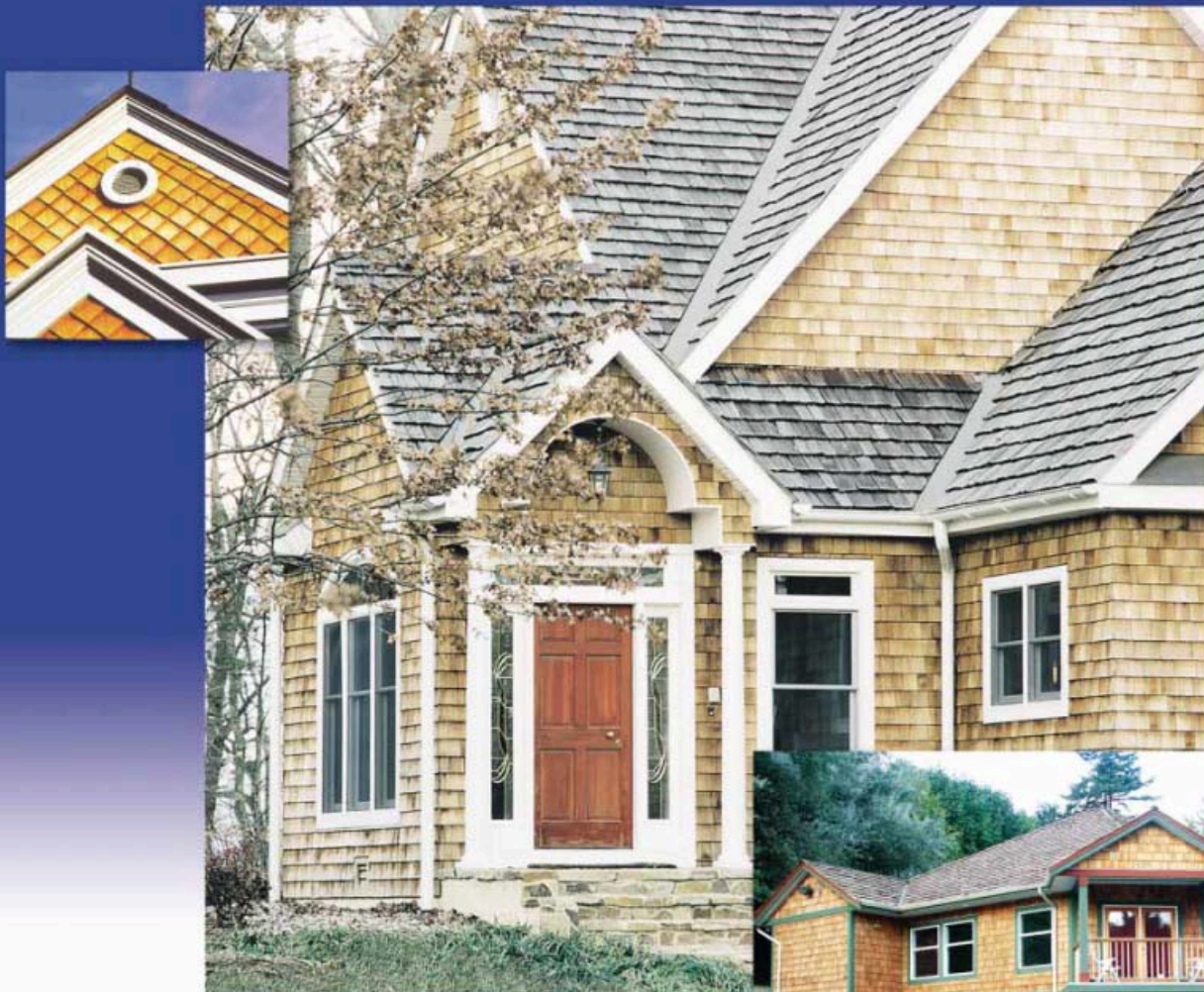
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20. Newbern Little League Field, Newbern, Hale County, Ala., Rural Studio, 2002–2003.

21. Boardwalk and Restroom Facilities, Perry Lakes Park, Perry County, Ala., Rural Studio, 2002–2003.

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Preliminary sketch: Fabrications, Hale County, Ala., 1997.

feared and unfamiliar world. The students found many of the materials—timber, chicken wire, colored bottles—for the tall, narrow, house with the big tin roof on

balance its more ambitious, big-time buildings against a wish to remain intimate and retain its rural soul? How can it maintain Sambo Mockbee's child-like sense of fun and adventure while laboring on more adult, multiyear, high-pressure projects?

MOCKBEE PAINTED PORTRAITS OF SOME OF HIS INDIGENT CLIENTS ("LIKE YOU AND ME, ONLY POOR").

Music Man's property. Boochie Patrick's 1,000-square-foot, modular house of 2004 was conceived as a possible replacement for the region's omnipresent housing form, the trailer. It has a steel frame with bays that can be enclosed with any material at hand, and, as at the Patrick's, can be tailored to a family's needs and the site.

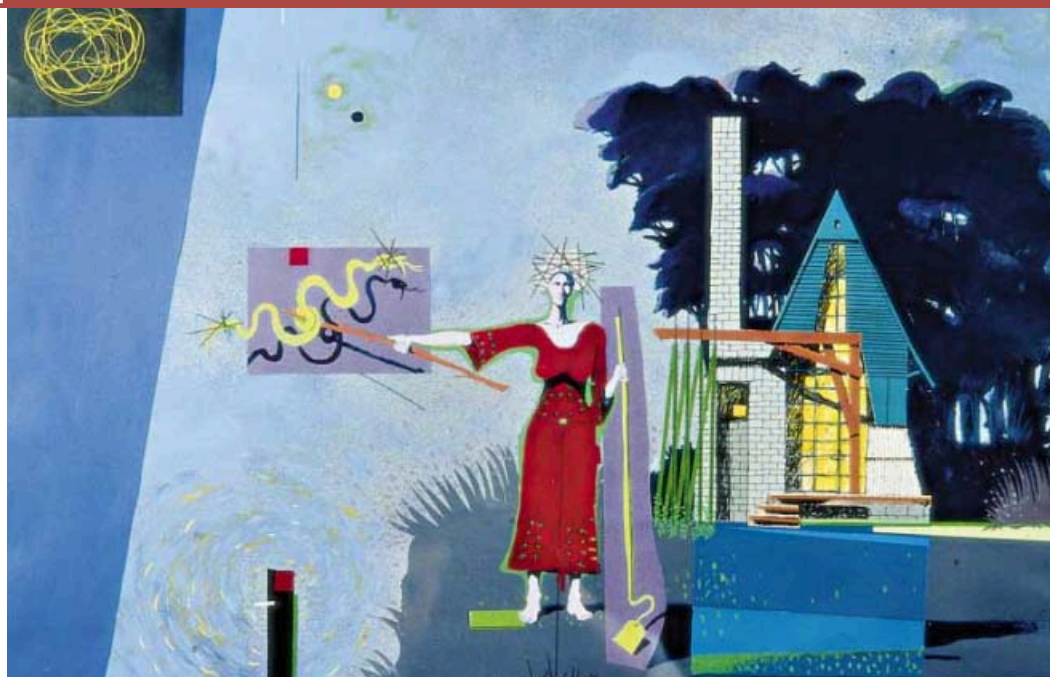
The Rural Studio's accomplishments pose questions: How can the studio

Jay Sanders, the second-year instructor from 2002–2004, observes that "Sambo never had a master plan for this place. Maybe his legacy is that it will live on without him, without me, without Andrew, without the students that knew him. If it continues to move forward, in 10 years it may not feel anything like it does today."

For now, Freear and his gang proceed boldly. Sambo would love it. ■

MOCKBEE THE ARTIST

Clockwise, from right: Portrait of Gayle, 1989; The Children of Eutaw Pose Before Their Ancient Cabins, 1992; The Coronation of the Virgin—1730 and 2001, 2001; Julius and His Mother Pose Before Their Ancient Cabin, 1990.



"There are thousands of dream places in the old South. You can sit on a bench in a tiny Confederate Park or fling yourself on the banks of a levee or stand on a bluff overlooking an Indian settlement, the air soft, still, fragrant, the world asleep seemingly, but the atmosphere is charged with magical names, epoch-making events, inventions, explorations, discoveries.... It is all over now. The old South was ploughed under."—Henry Miller, 1941, from *The Air-Conditioned Nightmare*. (Sambo attributed these words to this collage.)



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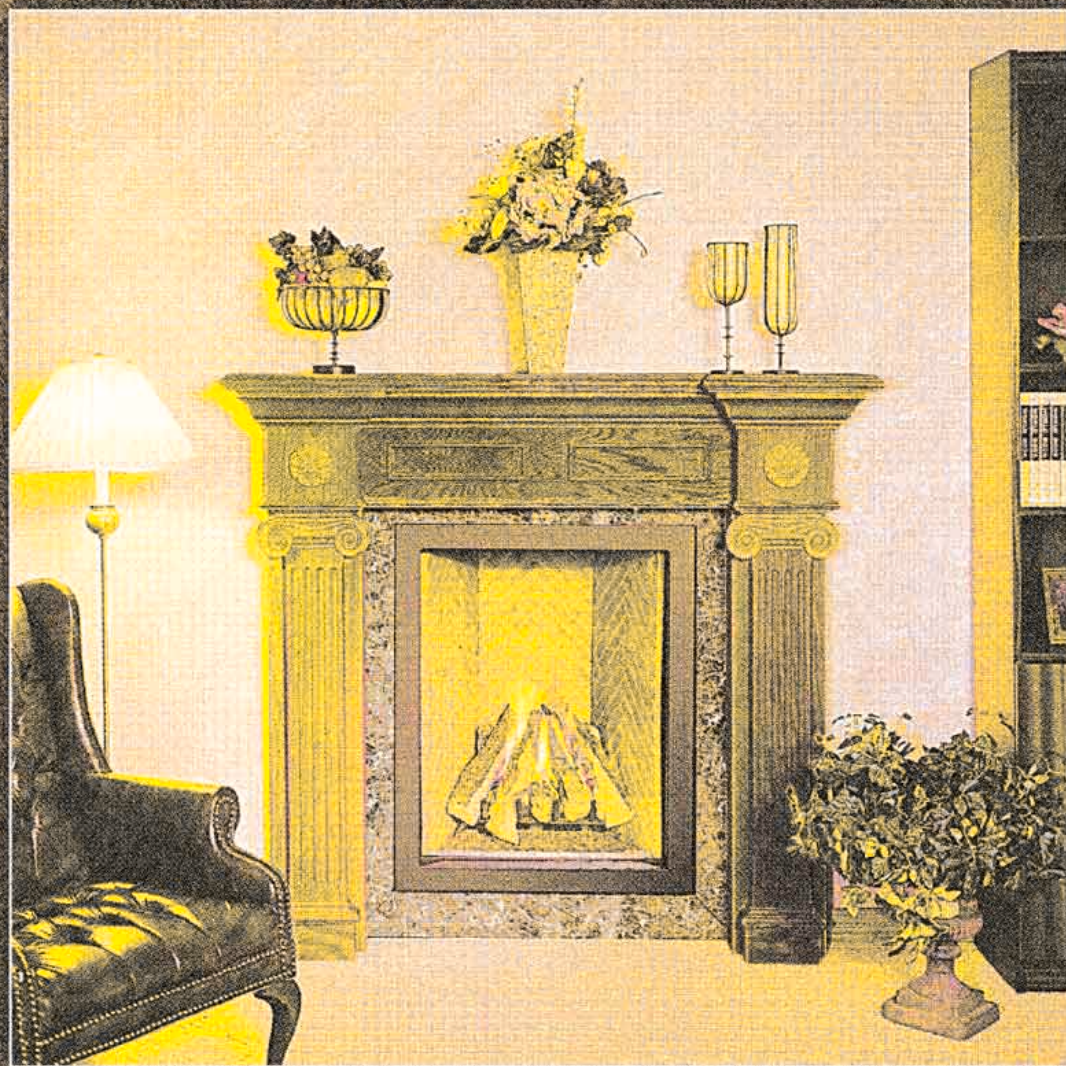
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Guggenheim Museum (Bilbao) - © Eduardo Chillida House, VEGAP, Navarre, 2001
Architect: Frank O. Gehry
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COMPOSITES GUREA

At the twilight of his career, **I.M. Pei** shows few signs of slowing down

Modernism's elder statesman looks back
over 50 years—and forward to
finishing new museums on three continents





At dusk, the transparent helical staircase glows in the new wing (known as the Schauhaus) of the German Historical Museum in Berlin. Pei's addition provides some 29,000 square feet of space for temporary exhibitions.

By Robert Ivy, FAIA

I.M. Pei's agility with the Modern form has garnered him prestigious commissions for museums and cultural institutions throughout his career, from the East Building of the National Gallery of Art (winner of this year's AIA 25 Year Award, page 172) to an addition and renovation of the centuries-old Louvre to a new wing for temporary exhibitions at the German Historical Museum in Berlin (pictured at left). Although he's been "officially" retired for more than a decade, Pei still has projects on his plate and a twice-a-week-at-the-office habit. Shortly after the AIA Accent on Architecture dinner on March 3 in Washington, D.C., editor in chief Robert Ivy visited Pei at his office in Lower Manhattan, where they discussed the evolution of Pei's design thinking, the importance of working abroad, and his current slate of projects.

AR: *You say you have retired, but you continue to be involved in projects. What are you working on right now?*

IMP: I haven't taken any new projects in the past three years—I told myself, if I cannot live long enough to finish it, I don't want it. So I have three projects now. The first one is the Musée d'Arte Moderne in Luxembourg, which is under construction right now. The museum will be located on top of an old, old fortress, Fort Tüngen, which the Austrians built in the 1800s. The client is the State of Luxembourg. I accepted the commission for the project in 1990 or 1991, after I retired, but it began only six months ago—it was stopped altogether five or six years for various reasons. The second project is a museum

1



1. Walkways and openings define space at the new wing (Schauhaus) of the German Historical Museum, Berlin, 2003.

2. The sun throws a lattice of shadows from a skylight at the Schauhaus.

2



in my hometown of Suzhou, China. And I am also designing the Museum of Islamic Art in the Middle East, in Qatar.

AR: *So do these projects involve design work, or development work and decisions about construction?*

IMP: It's a little bit of each. I just completed the design for the museum in Qatar, which I accepted about two and a half years ago. It's now under construction, but that's an exceptional one, because usually it takes longer than that. I'm doing most of the work on the Suzhou Museum on my own.

AR: *That's a very active, demanding schedule.*

IMP: I've been active all my life. In 1990 I retired from my firm, I.M. Pei & Partners, and for two years I didn't do much. Then I started to get kind of antsy, so I decided, I'm going to do some more work. And I chose to do work outside the U.S. because I've spent 45 years here and I wanted to learn more about what's happening in the rest of the world. So I travel to the Middle East, I travel to China, I travel to Europe. It's all very rewarding—the only problem is the travel is getting more and more difficult for me now. Ten years ago I would have enjoyed it a lot more.

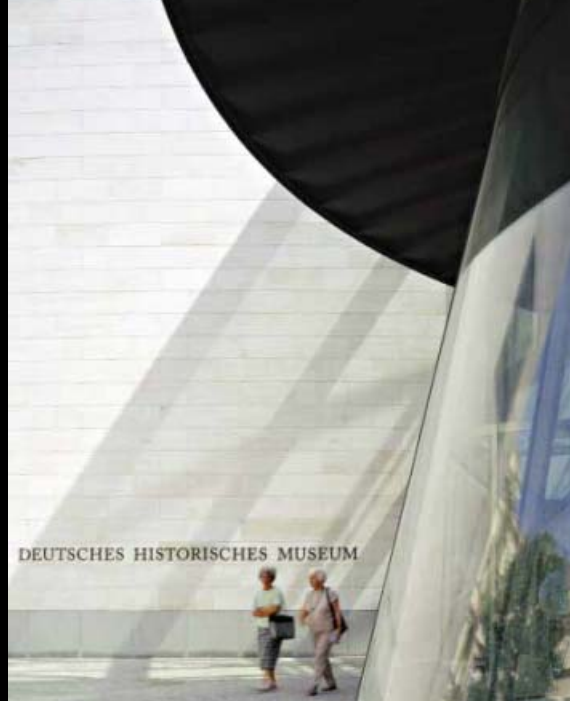
And my projects have typically taken a long time to complete. Buildings might take on average about five to seven years to finish, but in my case it's been longer, because the projects I have accepted within the past 15 years have been mostly government projects, and those involve some politics and funding issues, and approvals and so forth. So they're slower.

AR: *Tell me about the museum you're designing in your hometown in China.*

IMP: When this commission came, it was very special. I was born in Suzhou, a city not very far from Shanghai. It's a very interesting town—there is a long artist's tradition there, especially during the Ming and Ching dynasties, which produced many, many scholars and painters and so forth. That's where my family lived for 600, 700 years. When the mayor first came to me about designing a museum, I said no, it's too far away. They invited me to go back six or seven years ago, and I always tried to say no. But finally, a couple of years ago I accepted it. The location could not be more exciting. It's a very special site, surrounded by a wonderful garden. I thought the project would touch on my relationship with my past, my ancestors, my old home. The building is now under construction. It has two more years to go before it's complete.

AR: *How about your other projects? Say, the museum in Luxembourg?*

IMP: That project came to me after I had completed the Louvre. I was approached by the prime minister of Luxembourg and asked to design a museum for modern art, near the fortress [Fort Thüngen], which is being turned into a museum as well. It wasn't as big of a challenge as



3. Visitors walk next to the helical staircase at the Schauhaus.

3

4



4. Pei likes to play with geometry. A sharp angle within the Schauhhaus beckons visitors with its vista to the Zeughaus, a former military depot and museum that is undergoing renovation to house the German Historical Museum's permanent collection.

the Louvre, but I was very interested in it. For instance, I wanted to know why the building would be located on top of a fortress. Luxembourg was and still is today a crossroads, the place where Germany meets the rest of Europe. The country lost part of its territory to Belgium in the 1800s, and during World Wars I and II the German military overran it. The fortress was the natural symbol, the physical symbol of the country. Very few people have visited Luxembourg—when I went there and looked at it, I said, my God, it's built on a rock. And within the rock they had a castle, and within the city there's a network of tunnels so the residents could move around and defend themselves. That was of great interest to me. I was curious to know how Luxembourg remained an independent country—that's why I accepted the commission.

AR: *Let's go back and talk about a few of your past projects. Your work at the Louvre represented one of the first instances of an architect being employed by a major government agency in a way that gave you a prominent role in the country's self-image. Could you talk about that? Were you consciously aware of how important the Louvre was to them at that time?*

IMP: It was a total surprise that they approached me to do the project. You know the French, not to mention the Parisians—they see the Louvre as their monument, so to come to an American for a project like that is something I never expected. I thought perhaps they were just trying to show interest in different architects to try out the idea. But when President Mitterand asked me to see him, I knew that it was serious. Mitterand was a student of architecture, he had done a lot of research before he called me. He said, "You did something special at the National Gallery of Art in Washington—you brought the new and the old together." But John Russell Pope finished the West Building in 1941, so when the East Building opened it was only about 40 years old. But the Louvre is 800 years old! A much bigger design challenge.

I didn't accept the project right away, excited though I was. Instead, I told Mitterand that I needed four months to explore the project before I could accept it. I wanted that time so I could study the history of France, because what is the Louvre? The first portions were built in the 12th century, and a succession of rulers came, added on, built something, demolished something else. For 800 years the Louvre has been a monument for the French—the building mirrors their history. I thought by asking him for this time it might make him say no, thank you very much, because he was in a hurry—he'd been elected

in 1981 and his term would last only seven years, and this was 1983—so there was some pressure for him to accomplish something.

In those four months, I studied. I asked for four visits to the Louvre, one visit each month. And I asked the Louvre to keep things confidential at first, without revealing the fact that I was asked by the president to be involved, so that I could go to France unencumbered and visit the Louvre, assess what's wrong with it, what's right about it, what had to be destroyed or must be saved, that sort of thing. Mitterand agreed to all this. You cannot defend your design without knowing what you're designing for. When I was being questioned by the press about the design later on, all this preparation was very useful.



5

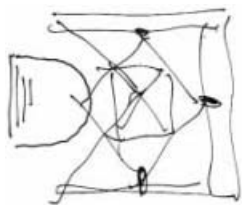
5. Generous glazing at the Schauhhaus signifies democracy and the joining of East and West Germany that enabled the founding of the museum.

6. A new glass roof topping a portion of the Zeughaus complements the glazing of the new wing.

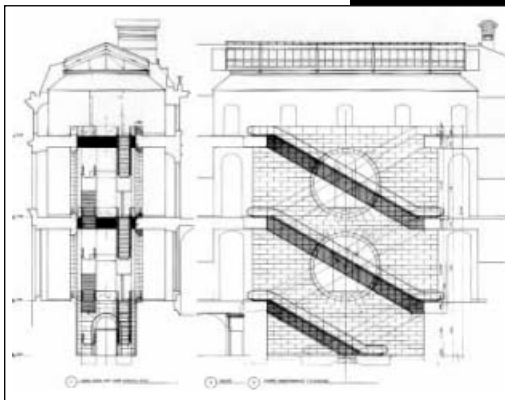
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7. An early sketch of Pei's reimagining of the Louvre's entry (Grand Louvre project, Phase I), Paris, France, 1989.

8. Section drawing of the Richelieu addition to the Louvre, which Pei reorganized during Phase II of the project, completed in 1993.

9. Spiral staircase at the Louvre, Paris.

10. The pyramid topping the Louvre's entry got all the headlines, overshadowing Pei's complex program of integrating a museum staff divided into seven fractious departments.

9



10



AR: The scope of the Louvre was so vast. You literally went through layers of history as you exposed and joined its lower levels, as well as designing an immense addition, and all with as little disruption as possible to the institution. No one ever focused on that—everyone just talked about the glass pyramid.

IMP: You're absolutely right. Everybody points to the pyramid, but the total reorganization of the museum was the real challenge. Mitterand

understood that. Few people know, for instance, that the French Ministry of Finance used to occupy the Richelieu Wing [north wing] of the Louvre. Mitterand was very aware of the importance of the Richelieu Wing, because without it, the Louvre is just a long L-shaped building instead of a U-shaped building. Soon after he became president in 1981, Mitterand commissioned a competition for a new building for the Ministry of Finance in Paris. That gave him justification to move the agency to a new location, and therefore enabled us to claim that space. Without it, I would not have been able to do the project. I probably would not have accepted the commission—I could not have done anything for the museum.

And the biggest challenge of the Louvre was beyond merely architecture. When I first went there in 1983, it was divided into seven departments, and each was totally autonomous. The department directors would not even talk to each other. They were very competitive for space and money. So, architecturally we had to change this situation—make seven departments into one and unify them as a single institution. I'm not so sure Mitterand realized how big a challenge this was; I certainly didn't. But the result worked out. Today the departments are all unified under one president, and they're also unified architecturally. The fact that people don't realize this huge challenge of the Louvre is totally mind-boggling to me.

AR: Let's discuss form for a minute. We talk a lot about form—it dominates the discussion of architecture in the media these days. You yourself are a master of form—the East Building of the National Gallery, for instance, is a superior example of your skills, as the AIA recognized this year. But everything you've talked about so far is about the programmatic, complex, deeper issues that reside within projects. How do your formal skills interplay with this programmatic thinking?

IMP: Ever since 1990, I haven't been all that interested in form, not at all. To create a work of architecture that looks exciting and different is not the challenge for me anymore. The challenge is for me to learn something about what I'm doing. I've been more interested recently in learning about civilization. I know something about the civilization of China, with my background, obviously, and I think I know something about American history. But that's about all. And I've traveled all over the world, and for a long time I didn't know very much about it, really. When I got the opportunity to do the new wing [the Schauhaus] for the German Historical Museum, for instance, I didn't see it as an opportunity for my own ego, to do something so exciting that every architectural publication would want to put it on the cover. I accepted it because I knew it was going to be a very difficult project, and I wasn't sure I could do something exciting there. Originally the building was to have



11. Interior court with glass roof, Louvre, Paris.

12. A gallery, Louvre, Paris.

13. More drama in glass at the Louvre, Paris.

12, 13



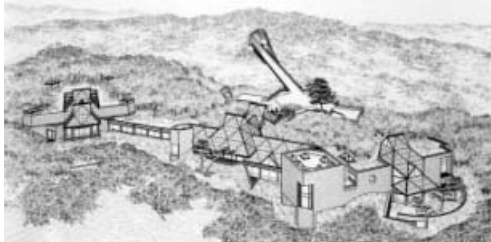
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14, 15

14. A sketch of the Miho Museum, nestled in the Shigaraki Mountains in rural Japan.

15. Pine trees line the exterior of the Miho Museum, but 80 percent of its structure is subterranean, as a bow to nature.

16. The bridge and tunnel that guide visitors to the museum span two mountain ridges.

17. Louvered space frames at the Miho Museum, near Shigaraki, Japan, 1996.



16



17

been located near the Reichstag, a very prominent site. But ultimately they decided to site this tiny little building behind an enormous military museum [the Zeughaus] dating from the early 18th century, which is very Prussian. I visited that museum, and you'd think that any collection of military artifacts would be all guns and cannons and whatnot, but there's a lot more than you'd expect there—a lot about Prussian history, which of course is the foundation of Germany. [The Zeughaus, a weapons depot before becoming a museum, is now undergoing renovation to house the permanent collection of the German Historical Museum]. This location has much less visibility. I had the idea to do something helical and transparent with the new wing, something that would be symbolic of the unification of East and West Germany. The prime minister personally

asked to see some sign of this in the building. When you're asked that by a client, it's an opportunity you just don't waste. So, while it was an exciting challenge, form-making is not the reason I'm still engaged in projects. One of the reasons I took this on was that I wanted to find out as much as I could about Germany's architectural history. The name that kept popping up was Karl Friedrich Schinkel. I've seen his museum, the Altes Museum in Berlin, but I hadn't visited any of his other work until I began designing the new wing. I think his greatest skill was the diversity of projects he achieved, from the very monumental, like the colonnade at the Altes Museum, to the small, domestic skills he brought to the villas he designed in Berlin and elsewhere.

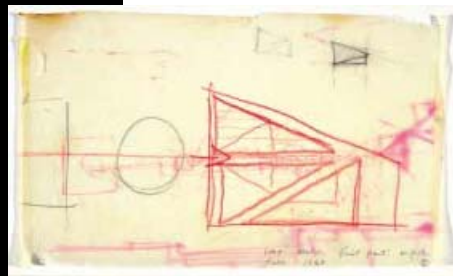
AR: *How did your museum project in the Middle East come about?*

IMP: How do I begin? Qatar does not have much history, it's a new emirate. So I couldn't draw on the history of the country; its history is really just being a desert. But I thought, the one thing I must learn about for this project is the Islamic faith. So I read about Islam and Islamic architecture, and the more I studied the more I realized where the best Islamic buildings were. At the beginning, I thought the best Islamic work was in Spain—the mosque in Cordoba, the Alhambra in Granada. But as I learned more, my ideas shifted. To begin with, the climate of southern Spain is not at all like desert, where most Islamic architecture is built. I kept searching. I traveled to Egypt, and to the Middle East many times. I saw early Islamic architecture in Damascus, Syria, where they took some early Christian churches and transformed them into mosques, so they were not pure Islamic—just as in southern Spain, it's no longer pure Islamic architecture either, because it gets mingled with Christianity. Or in Turkey, where the Ottoman influence is felt, too—it's Islamic but not pure Islamic.

I found the most wonderful examples of Islamic work in Cairo, it turns out. I'd visited mosques there before, but I didn't see them with the same eye as I did this time. They truly said something to me about Islamic architecture. The museum I'm designing is more influenced by the Mosque of Ibn Tulun than any other building. This mosque is very austere and beautiful, its geometry is most refined. You think of Gothic architecture, it's so elaborate. This is the opposite—so simple.

AR: *It's inspiring to see that you're so engaged with these issues. You're still a student!*

18



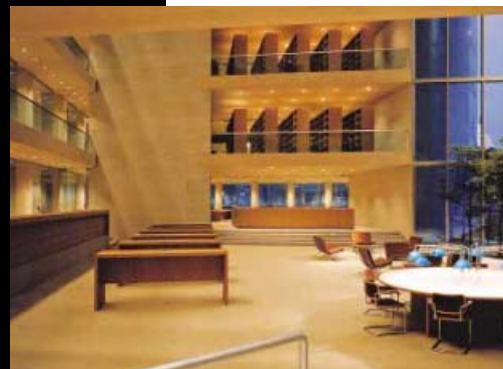
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18. The famed triangles-within-the-trapezoid sketch of the East Building of the National Gallery of Art, Washington, D.C., 1968.

19. Paul Mellon, J. Carter Brown, and I.M. Pei stand in the nearly-complete atrium of the East Building, January 1978.

20. The library and research area at the East Building has windows on the National Mall and the U.S. Capitol Building.

20





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21, 22

21, 22. The Bank of China Tower, rising high amid the density of Hong Kong, 1989.

IMP: Yes, I am. You always should be. That's what makes life interesting.

AR: *We've talked a lot about museums, but there are other building types that you've been involved with. The Bank of China building, for instance, in Hong Kong—a tall building. The issues you faced with that project are a very different set of concerns from those of museums, aren't they?*

IMP: That's very true. Actually, many of the projects I'm most proud of are tall buildings, especially the housing projects. In New York I have two: one in Kips Bay and one at New York University. At that time, those projects were most challenging, architecturally—how do you enable redevelopment, foster urban renewal with a tall building? For Kips Bay, I had a wonderful client, William Zeckendorf, who was willing to gamble with me on using concrete and not brick for a high-rise apartment building. That was very innovative at the time.

AR: *How old were you when you got the Kips Bay project?*

IMP: I came to New York and worked with Zeckendorf in 1948. I was 30 years old. Kips Bay came to me two years later, in 1950. Later I got my first museum project, the Everson Art Museum in Syracuse. That was about 1960, 1961. I was very busy back then. You don't really get a chance to do anything until your mid-40s. I told my sons that: Don't expect to accomplish too much in the early part of your life. I was fortunate—after the war, I left China, in 1944; there was nothing going on for me at the time. I went back to Harvard to teach and to get my master's degree. I thought teaching would give me the most flexibility in case I had to return to China to be with my family. I didn't really practice architecture until I got to New York; I didn't have many qualifications or much experience at all. Becoming a designer is a long process of learning. You make mistakes when you're young. It's important to have the opportunity to make mistakes.

AR: *What are your days like when you're not at work?*

IMP: At home, I have a wife, fortunately, and my children are all grown, and I have many grandchildren. I spend weekends with my grandchildren; I adore them. On a daily basis, my home life is very simple. I spend about 2 hours every morning reading the newspaper. As my two assistants will tell you, I don't come to work in the mornings, for two reasons. First, I want to be informed—that means I go through *The New York Times* every day, and then I watch some news on television. The second is, mornings are the best time to communicate with my clients abroad. So I communicate with Luxembourg, with Berlin, with Paris—I continue to do work on the Louvre, it didn't end in 1993. So I'm on the phone a lot to my international clients in the mornings, after I get through the news.

Two afternoons a week I come to my office. If I'm not here, I go to my sons' office. I still have two of my projects working through them—the Museum of Islamic Art in Qatar and the Suzhou Museum.

AR: *Did you do any conceptualizing for the redevelopment or the memorial in Lower Manhattan?*

IMP: No. That project probably will take 10 years, and I didn't want to think about a project that I couldn't finish. That's a kind of temptation. It was the same reason I declined to submit an entry for the U.N. addition in New York, the one that [Fumihiko] Maki is now working on. I thought I wouldn't be able to finish it. One has to realize one's limitations. Why kid yourself? ■

23. Pei's first museum project, the Everson Museum of Art, Syracuse, New York, 1968.

24. University Plaza (housing), New York University, New York, 1967.

25. Kips Bay Plaza (housing), New York, 1963.



23



24



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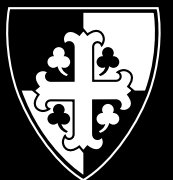
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type **30**



20-40% uplight

In a city averse to towers, **30 ST. MARY AXE**, the “towering innuendo” by **Foster and Partners**, is a big ecofriendly hit

By James S. Russell, AIA

PROJECTS

Londoners were once skeptical of 30 St. Mary Axe, the tapered bullet that has clambered into the skyline over the past two years. It's usually called the Gherkin, a title standing in for a variety of unprintable descriptions, or the Towering Innuendo. But as its sleek, now-complete form bobs and weaves into view around the city, locals have reportedly developed a fondness for the first tall building to be erected in the City of London (its financial district) in 25 years.

At 40 stories, it would not be regarded a large tower in most of America's downtowns, but in the low-rise, finely grained cityscape of London, its 500,000 square feet look gargantuan. How could a tower so unconventional in nearly every respect look like a big, friendly alien rather than a menacing intruder?

This is no airplane-napkin sketch fast-tracked into reality. Formerly, the site was filled by the Baltic Exchange, a low-rise pile that was severely damaged in 1992 by a bomb planted by the Irish Republican Army. A debate about whether the building could be saved went on for a few years. Thanks to its client, Swiss Re, when Foster and Partners came on the scene in 1997, both recognized that a replacement could be proposed only if it was clearly superior. Extensive local consultation led to an approval process that nevertheless consumed another two years.

The curving profiles that have become a signature of Foster's work in recent years, as in London's City Hall [RECORD, February 2003, page 110], respond to local environmental conditions—and the ability of the architect and its consultants to deploy sophisticated computer-aided

Project: 30 St. Mary Axe, London

Owner: Swiss Re

Architect: Foster and Partners—
Norman Foster, Grant Brooker, Paul
Leadbeater, Michael Gentz, Stuart
Milne, Rob Harrison, Jacob Nørlov,
Robin Partington, Tim O'Rourke,
Paul Scott, Ben Puddy, Ken
Shuttleworth, Jason Parker, Francis
Aish, Simon Reed, Gamma Basra,
Narinder Sagoo, Geoff Bee, Sebastian
Schoell, Aike Behrens, Michael
Sehmsdorf, Ian Bogle, John Small,

Thomas Brune, Robbie Turner,
Julian Cross, Neil Vandersteen, Joel
Davenport, John Walden, Ben
Dobbin, Tim Walpole-Walsh, Paul
Kalkhoven, Hugh Whitehead, Chris
Kallan, Richard Wotton, Jürgen
Küpper, Helen Yabsley

Consultants: Arup (structural, fire
safety); Hilson Moran Partnership
(mechanical and electrical); BDSP
(environmental engineers)

General contractor: Skanska
Construction UK

PHOTOGRAPHY: © RICHARD BRYANT/ARCAID (THIS SPREAD)



Who could blame
London for resisting
tall towers, considering
the dourness of the
few that are there. Now
30 St. Mary Axe has
put a striking new
shape on the skyline,
portending many more,
pundits say.





modeling and analytic tools. In this case, the Foster team, including Ken Shuttleworth, who recently left the firm, came to the circular plan and tapering section because it lets wind slip by, according to Rob Harrison, an associate partner, which reduces lateral loads on the structure. More important, the shape minimizes the tendency of tall buildings to focus gale-force winds on unwitting pedestrians at street level. While the form puts the largest floors above the prevailing 10-story-high norm, where views open across the city in all directions, Foster slimmed the tower on the lower floors as well, which opened the dim, surrounding streets to

HOW COULD SO UNCONVENTIONAL A TOWER BOB AND WEAVE INTO VIEW LIKE A BIG, FRIENDLY ALIEN?

daylight. The trim ground floor left space to carve out a handsomely proportioned plaza, offering a shortcut through the City's twisting blocks for cell-phone wielding dealmakers headed to the Tube. Such sensitivity to the public realm helped the building survive the tough planning review.

The diagonally gridded exterior binds the building form visually. (Imagine the bulging-gut look it would have with vertical mullions.) It actually emerged as Foster and his team worked out the most remarkable feature of the building, the six-level light wells, six per floor, which spiral continuously upward. According to John Brazier, the project director at Arup, reconciling the 5-degree-per-floor rotation in the light wells generated the diagonal grid of the structure and the cladding (see "Building a Tower on the Bias," page 222).

Foster has long designed to achieve a more humanely social work environment. In the Commerzbank tower (RECORD, January 1998, page 69), he pioneered the use of skygardens—restful oases for informal meetings, for sipping a coffee, or just thinking—hovering high above the city. While conventional real estate wisdom might deem the light wells a frill, they are integral, in Foster's hands, to a strategy that addresses the chief criticisms of tall buildings as work environments: that the big pancakes of space neither offer the amenities highly valued staff want nor encourage collaborative work. For Swiss Re, Foster offset each level of the light wells to offer terrace overlooks. The advantage is simple, if a bit abstract: If you see people on other floors of a tall building, you are much more likely to feel they are part of your group, and that you are in this

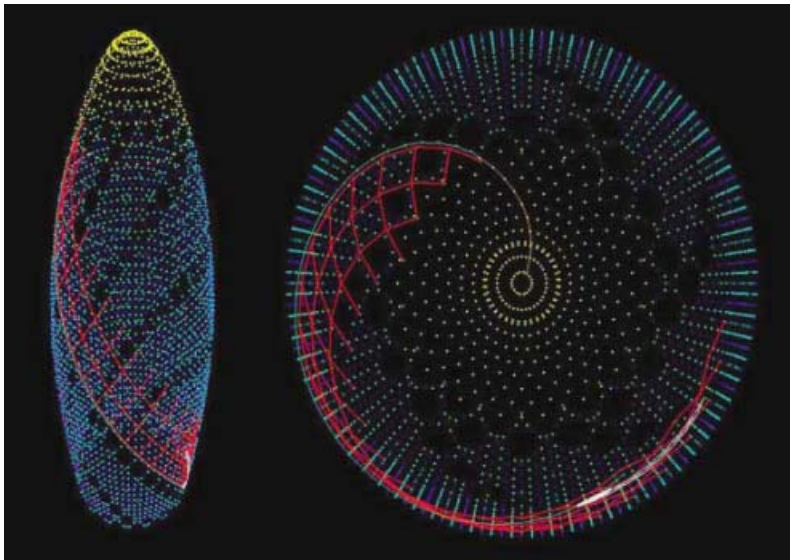


30 St. Mary Axe pops into view from vantages all over London. Its anomalous form and intricate, beehive-like skin change the notion of skyscraper scale. In coming years, it may anchor a cluster of new towers.

Light wells divide the building vertically into six-story modules. To suit tenants, individual floors can be isolated.

 This architectural section drawing illustrates a tall, slender building with a tapered, conical profile. The facade is composed of a dense grid of diamond-shaped structural elements. Internal horizontal lines represent floor slabs, which are grouped into six-story modules. Vertical light wells are shown as open spaces within the building's core, providing natural light to the interior. The building is situated in an urban context, with other structures and a street level indicated at the base.

Architectural section drawing of a tall, tapered building. The structure features a diamond-patterned facade and internal horizontal divisions representing floor slabs. The building is divided vertically into six-story modules by light wells. The drawing shows the internal layout, including rooms and corridors, and the building's integration with the surrounding urban environment at the base.



The engineers devised a two-story-high triangular structural module for the building: tubular columns running up the exterior that are fire-proofed and clad in faceted, painted metal. (Because cross bars are painted dark and diagonal members painted white, the structural grid only looks like a four-story diamond when it can be seen through the glass from outside.) Computer analysis helped to locate fixing points in three dimensions (diagrams, bottom left). Special fittings at the diagrid intersections align adjacent panels to follow the bidirectional faceted geometry. The latticelike structure and curved surface efficiently resist wind forces, which means that floor beams could be sized smaller and the core did not have to be braced, freeing up interior space. (The occupied area is column-free.)

sub
 and-
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 & minimal

main gluing
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 as schmidlin
 cane marks
 without extra
 work in shaper

air grill
 block

dark grey
 horizontal
 striping

primary diagonals
 by white

INTER
 MARKS
 & 60 mm
 fins
 silver

Inside the column diagrid, an inner membrane of glass leaves an insulating air layer between the outer curtain wall and the occupied space (heated by building-exhaust air as needed). A tapered, horizontal spandrel divides floors. *J.S.R.*





Tinted glass cladding the light wells forms dark spiraling stripes on the otherwise transparent facade. White metal clads the structural diagrid inside the glass, traced by external white-painted mullion caps.

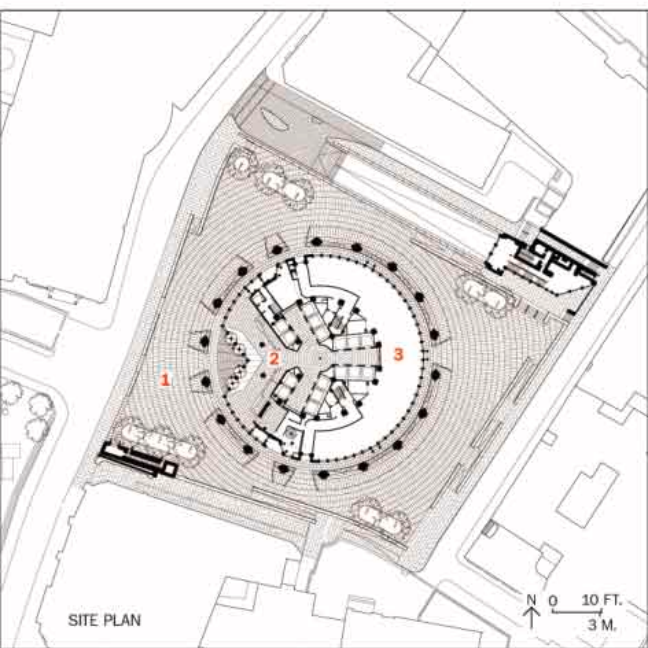


business endeavor together. You'll feel invited to move from floor to floor rather than remaining psychologically sealed in your own area.

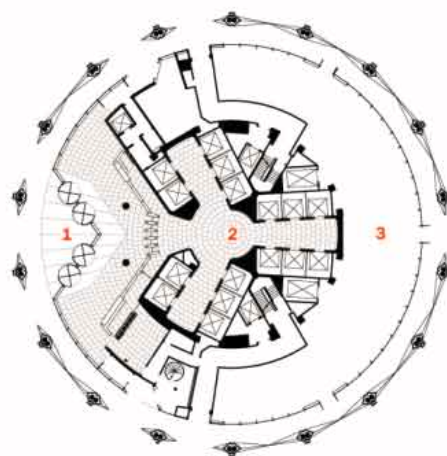
On this much tighter site, the social spaces are narrower, more intimate than at Commerzbank. "Everyone's conscious that the balcony edges are the best spaces in the building, with great views up and down the light wells," said Sara Fox, who has directed the building project for four years, after working to build the firm's innovative American branch in Armonk, New York [RECORD, June 2000, page 144]. These areas are reserved for coffee bars, copy centers, and other informal-gathering functions, rather than devoted to departments. "We spent a lot of time with staff talking about the interconnectivity this makes possible," she said. As people move into the building, she adds, "they come up to me and say, 'Oh, *now* I get it.'"

Workplace quality and energy conservation are inextricably woven together in the building. "We wanted an environmentally responsible building," explained Fox. "We didn't have a checklist; we asked Foster to explore what was possible." The commitment was meaningful for the company well beyond corporate altruism. "We are in the reinsurance business," Fox explained. "For us, sustainability makes excellent business sense because we pay claims on behalf of clients for floods, heat waves, droughts. To the extent that these claims are related to global climate warming, it is only prudent of us to contribute as little to it as possible."

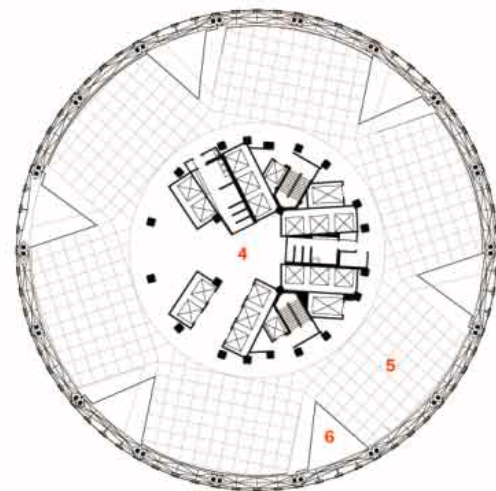
The light wells bring daylight deep into the space, even to desks positioned closest to the core. ("That's a lifestyle issue—quality of workplace for staff," explained Fox.) The quality of daylight from the floor-to-ceiling exterior windows is also high, because heat gain from the sun is trapped in the space between the external curtain wall and a second glass wall placed just inboard of the external column diagrid. The insu-



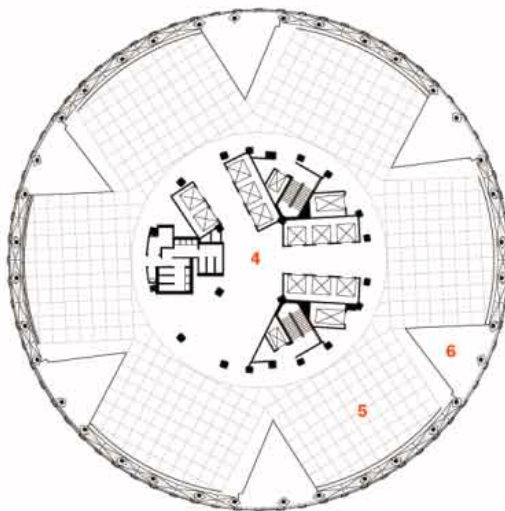
SITE PLAN



GROUND FLOOR



SIXTH FLOOR



TWENTY-FIRST FLOOR

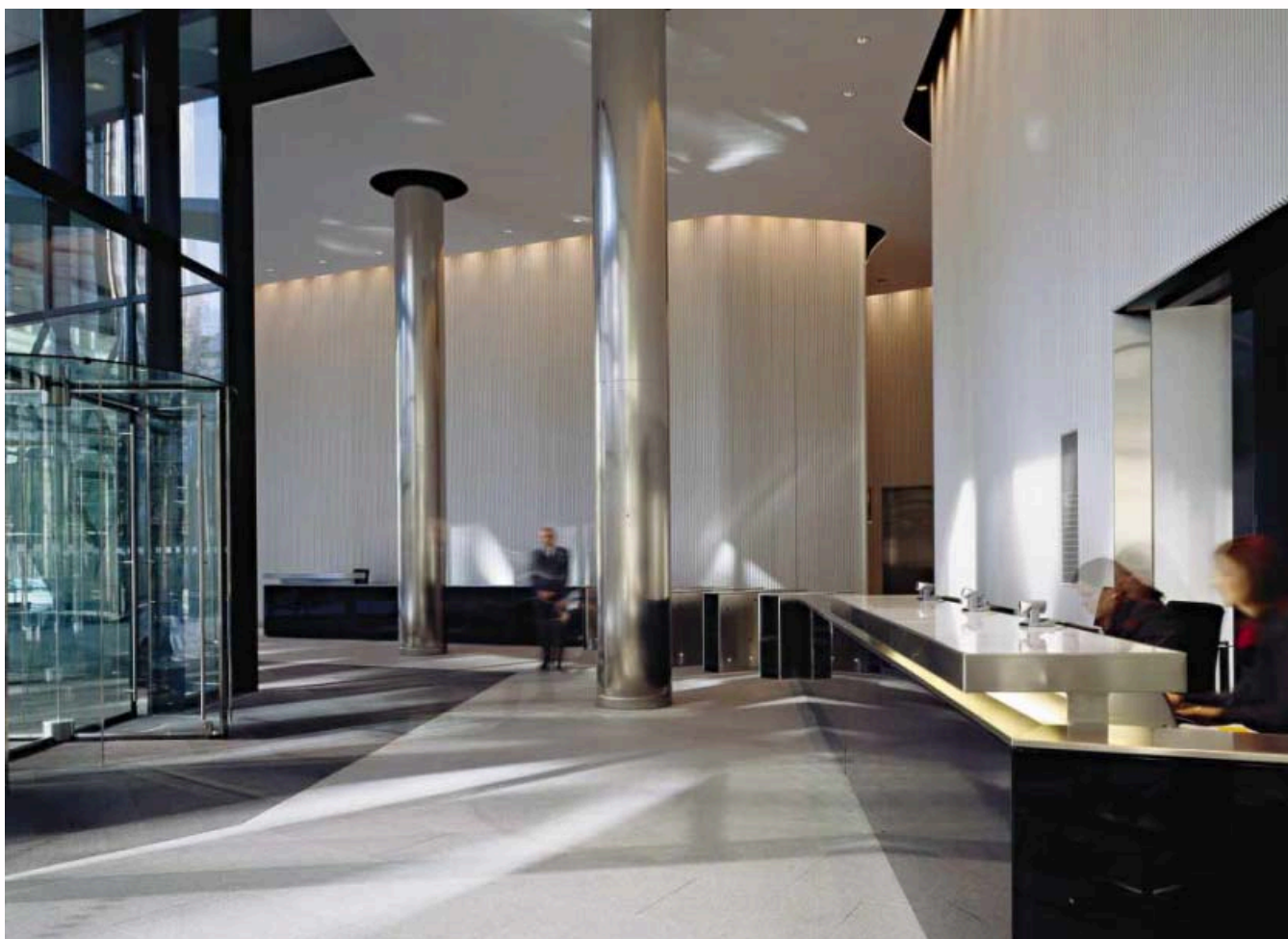


FORTIETH FLOOR

0 20 FT.
6 M.

1. Entry
2. Lobby
3. Retail
4. Core
5. Office modules
6. Light well
7. Private dining
8. Elevator/stair

The inward taper of the tower brings sun into a generous plaza that opens up dark, medieval streets (opposite, top). The slim curtain wall forms a dome over a rooftop restaurant nearing completion at press time (opposite, bottom). The diagonal grid of the structure opens to form a recessed entrance leading to the lofty lobby (right).





lating layer not only saves energy, it permitted the use of clear glass, protected by blinds in the thermal layer. By contrast, the glass in the light wells needed to be deeply tinted (visible on the exterior as dark, spiraling stripes). The triangular light wells divide the floors into six 2,500-square-foot (on average) rectangular wedges, offering an efficient shape for laying out offices or open-plan workstations.

With automatically opening windows, the light wells conduct fresh air. The interior glass wall is left out at the balconies, so that fresh air penetrates the entire floor (one much deeper than the naturally ventilated norm) without mechanical assistance. Air warmed by occupants and equipment rises up the chimneylike light wells, drawing in outside air. The round floor plate aids airflow by molding a distinct zone of negative air pressure on the leeward side, which draws in more windward-side air. Although the building is mechanically heated and cooled, the natural-ventilation scheme should leave the systems idle much of the time, accounting (with the daylighting) for much of the building's reduced dependence on climate-altering fossil-fuel combustion. (Local air-

“IT’S ONLY PRUDENT OF US TO CONTRIBUTE AS LITTLE AS POSSIBLE TO GLOBAL WARMING.” — SARA FOX

handling units allow mixed-mode use by zone and by floor, as well.) According to Brazier, current local guidelines for low-energy offices target electricity use of 175 kilowatt hours per square meter (10.76 square feet). He expects Swiss Re's new building to knock up to 25 kwh off that.

Swiss Re occupies about half the building; the remainder has yet to be tenanted in a moribund real estate market. Nevertheless, the completion of 30 St. Mary Axe—and its acceptance—portends a deluge of new office buildings, according to pundits. As they vie for height, the towers announced to date compete on the basis of amenity, energy responsibility, and aesthetics (the designers are all household names: Piano, Grimshaw, Kohn Pedersen Fox, Rogers, Wilkinson).

None of the long-announced towers has yet begun construction. Fox echoes their developers in claiming that more towers will get built. “London is really the financial center of Europe. Most firms, particularly in financial services, want to be at the heart.”

London and Lower Manhattan, both seeking dominance of global finance, now offer a study in contrasts. “Location is so much more important in the U.K. than in New York,” explained Fox, noting that a consensus has developed that London's City must grow to remain vital. New York, which perfected the skyscraper downtown, has ceded tall-building innovation to Europe and Asia. It is far less sure that the proximity enabled by tall buildings still pays off. Will tenants balk at innovations that raise rents? Is a horizontal, dispersed business model more prudent in a world wracked by terrorism?

The next few years will tell which model comes out on top. The stakes are certainly high. If a great number of American financial figures start taking meals in Swiss Re's “nose cone” restaurant (it's private; sorry), where breathtaking city panoramas open through the spidery fretwork of the building's diagrid crown, you can be sure London's (and Foster's) lessons won't be lost. ■

Sources

Curtain wall: Schmidlin; Waagner Biro

Glass: Eckelt; Okalux

Acoustic wall panels: Decoustics

Lighting: Wila

Security gate: Marzorati Ronchetti; Gunnebo Mayor

For more information on this project, go to Projects at www.architecturalrecord.com.

Swiss Re reserves the terraces in its light wells—and their dramatic views (looking up, opposite; looking down, this page)—for functions that trigger idea sharing. The white-painted diagonals and dark-painted horizontals both enclose structural members. Making other floors visible also breaks down physical barriers to collaboration. Ample daylight for offices (opposite, bottom) comes both from the curve of the exterior and the wedge-shaped light wells.





Roger Duffy of **SOM** weaves together art, architecture, and landscape in a crystalline new upper school at **GREENWICH ACADEMY**

By Clifford A. Pearson

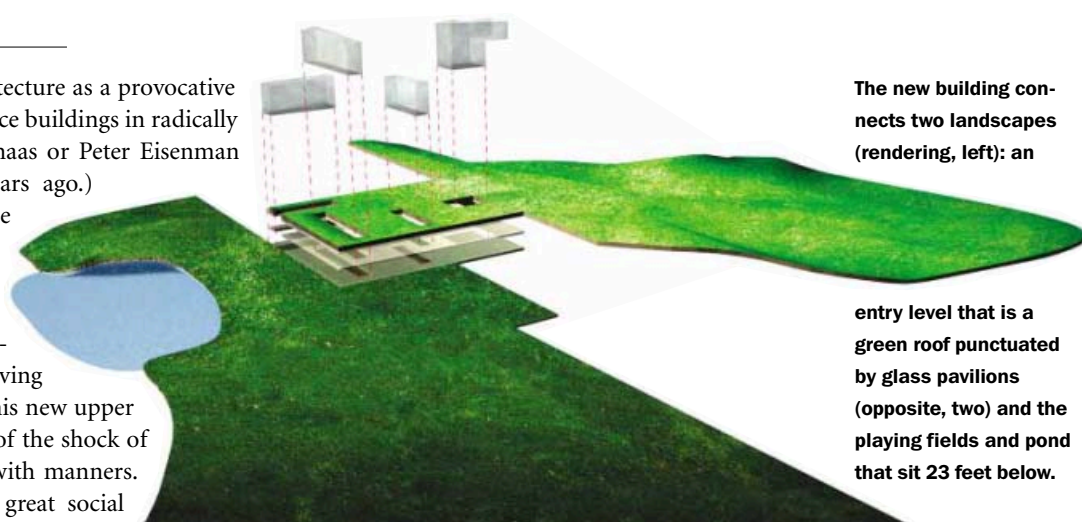
Some architects celebrate architecture as a provocative act, forcing people to experience buildings in radically new ways. (Think Rem Koolhaas or Peter Eisenman today or Adolf Loos 100 years ago.)

Roger Duffy, AIA, a design partner in the New York office of Skidmore, Owings & Merrill (SOM), has a very different way of approaching his work, even though it too pushes the boundaries of architecture. “A lot of my projects are about resolving differences,” he explains while touring his new upper school at Greenwich Academy. Instead of the shock of the new, he delivers bold architecture with manners. Like a foreign-exchange student with great social skills, his buildings stand out but earn high grades for getting along well with others.

A 45,000-square-foot addition to a private girls’ school in one of the country’s most affluent communities, the new building at Greenwich Academy must fit between a nondescript middle and lower school from the 1970s to the north, a 1990s performing arts center and gymnasium to the south, and a Georgian mansion to the east that originally housed the entire school but now serves as its administrative center. In addition to this awkward mix of eras and structures, the new upper school had to negotiate a 23-foot drop from the campus’s entry level to that of its playing fields and pond to the west. “We decided to use our building to weave together the two topographies,” explains Duffy. “We saw the project as a landscape connecting the campus.”

Sharon Dietzel, the head of the upper school, admits that SOM was not an obvious choice to design the building, since the firm is better known for its large commercial work. But when the school asked several architects to propose ideas for renovating the existing upper school, SOM recommended tearing it down and building from scratch. “Although it was probably more expensive, we all knew that was the right approach,” Dietzel notes. During initial conversations with the school’s faculty and staff, Duffy and his team helped the client envision a facility quite different from anything already on the campus. “By talking about light and air, instead of square footage or style, they helped us think in a different way,” recalls Dietzel.

Integrating landscape and architecture, Duffy and his team



The new building connects two landscapes (rendering, left): an

entry level that is a green roof punctuated by glass pavilions (opposite, two) and the playing fields and pond that sit 23 feet below.

created a grassy lawn on the building’s roof, which serves as the entry level. Glass pavilions (or “light chambers”) emerge from this artificial landscape, bringing daylight into the building, which tumbles down the hillside. As visitors enter the upper school through the largest light chamber, they see only grass, glass, and the woods beyond. Low stone walls, made from rock dug from the site, offer places to sit in good weather and help connect the new building to the earth and the old mansion’s stone base. The new snaps elegantly into place here.

The light chambers—clear glass boxes supported by exposed glue-laminated timbers 4 inches thick—organize the school into its four main components: math/sciences, art, humanities, and learning center (library). Classrooms, faculty offices, and other spaces for each discipline cluster around their particular light chamber, creating a critical mass of activity and a sense of identity. But common spaces flow

Project: Greenwich Academy Upper School, Greenwich, Connecticut

Architect: Skidmore, Owings & Merrill/New York—Roger F. Duffy, AIA, design partner; Peter Magill, AIA, managing partner; Walter P. Smith, AIA, education specialist; Scott Kirkham, senior designer; Christopher McCready, AIA, project manager; Marie-Christine

Bellon Manzi, Thibaut DeGryse, Nayareen Chapra, Jon Mark Capps, Javier Haddad Conde, project team
Collaborating artist: James Turrell
Engineers: DiBlasi (structural); Atkinson Koven Feinberg (mechanical)
Landscape: Brown and Sardina
General contractor: Turner Construction



The entry pavilion (above and opposite) also serves as the hub for the math/science department. A translucent glass floor around the entry stairs brings light to the level below. An elegant curtain wall rises above the green roof to become a glass balustrade (left). Shades on the building's perimeter walls let users control the amount of sun that comes inside (far left top and bottom).

smoothly into one another, so you get a sense of connections, not boundaries, as you walk through the building.

During design development, Duffy invited artist James Turrell to collaborate on the light chambers. “It increased the level of difficulty logarithmically,” says the architect, “but was worth it.” Turrell turned the four glass containers into colored-light boxes using a combination of fiber optics and light-emitting diodes (see sidebar, page 232). Turrell’s role was much more than that of an artist adding an installation to a building project, states Duffy. “He was a true collaborator,” helping the architects shape the glass pavilions and the experience of moving through the building. For example, the artist convinced the architects to torque the roof angle of the two light chambers visitors see as they enter the first chamber. “This way, you read the subsequent chambers as volumes, not just as planes,” says Duffy.

Beyond the pavilions, the architects carved a series of outdoor rooms from the hillside site to bring daylight in from the north and south. The largest of these spaces—what Duffy calls the “learning center courtyard”—acts as a kind of campus piazza linking the upper school to the cafeteria and middle and lower schools to the north. “Before, we had a series of disconnected buildings,” explains Dietzel. “Now we have an academic village.”

Once upon a time, school architects tried to impress on students the importance of learning by designing buildings that harkened back to bygone eras or used heavy materials rooted in historical associations (Harvard brick or Neoclassical stone, for example). SOM tried a different

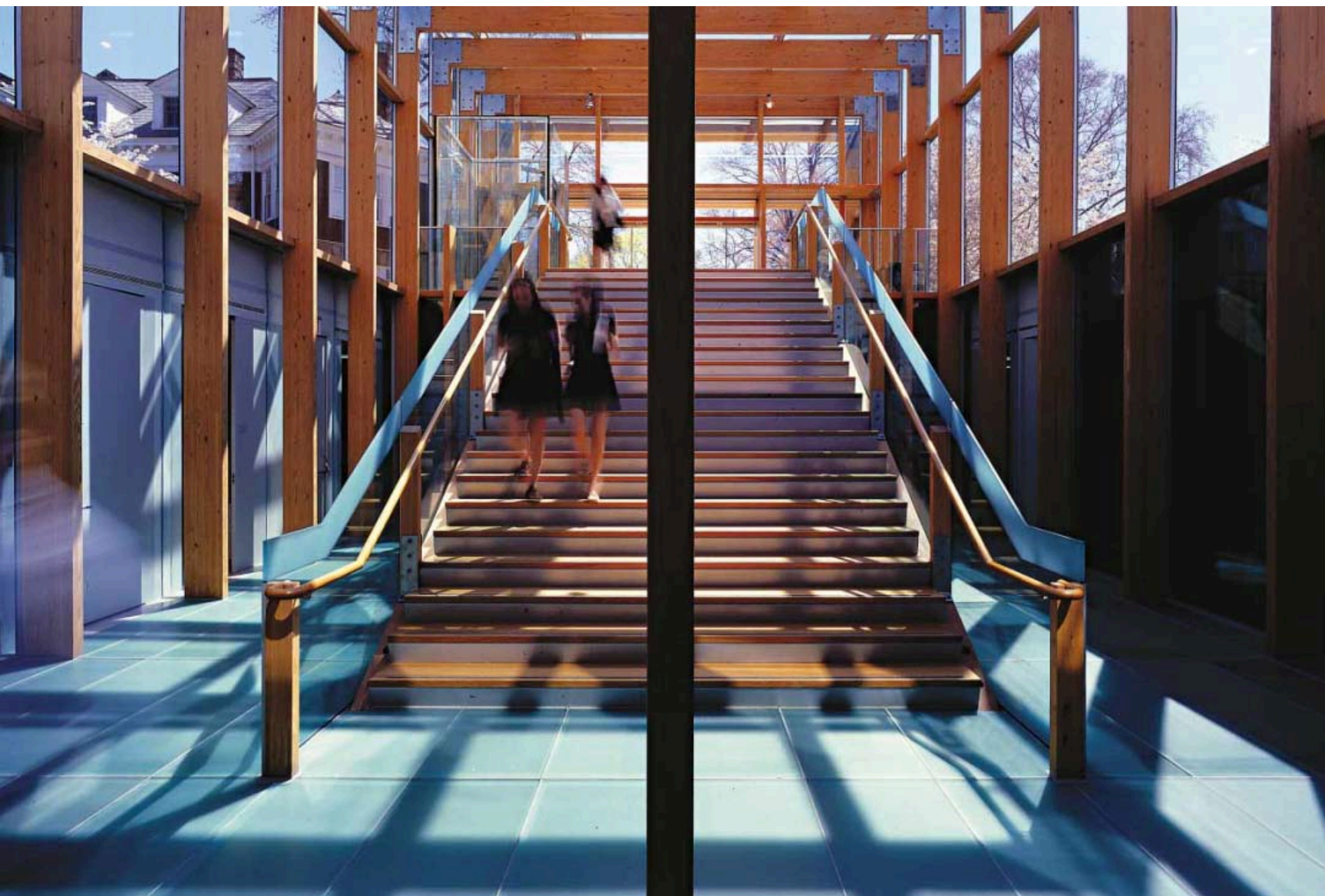
tack at Greenwich Academy, designing a building so light that it almost disappears in the landscape. To do this, the architects devised a steel-frame structure with a glazed curtain wall for the bulk of the building and glue-laminated timber frames for the light chambers. “The wooden members soften the sharp edges of the boxes,” says Duffy. “We didn’t want a hard Modernism.”

All classrooms enjoy floor-to-ceiling glazing on the outside and daylight coming in from the light chambers on the inside. A translucent

“THE LIGHT HAS A PHYSICAL AND PSYCHOLOGICAL AFFECT ON PEOPLE; IT RELAXES THEM,” SAYS THE SCHOOL’S HEAD.

glass floor on the upper level of the entry pavilion adds to the sense of light everywhere. Interior and exterior shades allow people to control sun coming in or views from interior common spaces.

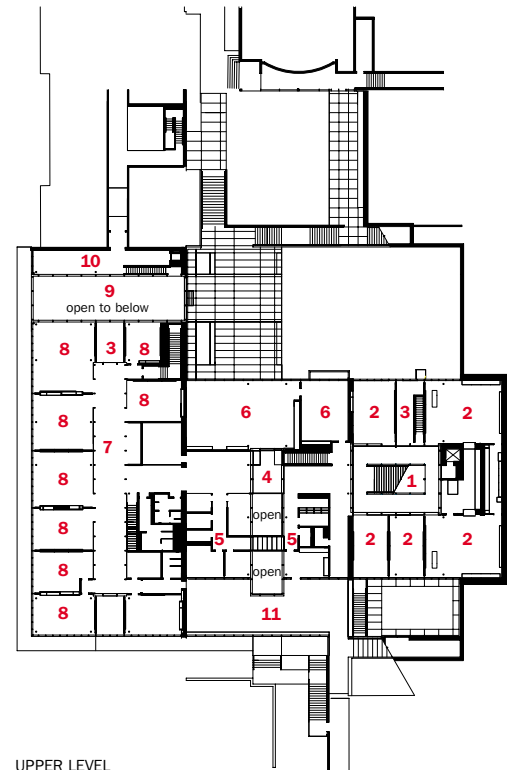
The building’s architecture has affected the way people behave in it, says Dietzel. “We have 150 adolescents here, but it’s always quiet. All the light has a physical and psychological affect on people; it relaxes them.” At the same time, the transparency of the architecture has made people less territorial, she notes. Teachers and students interact with each other all over the building, not just in the more formal settings of the classroom and teacher’s office. She also reports that attendance is up, even for seniors who have the option of spending some time off-campus. “This building celebrates the potential of children, and so few schools ever do that.”





To show how art can be integrated with a learning environment, SOM collaborated with James Turrell on the design of the school's light chambers, turning them into glowing boxes whose colors change slowly during a programmed time cycle. Fiber optics set into channels at the threshold of each chamber and the perimeter of the floor create planes of colored light, while bands of light-emitting diodes (LEDs) on the walls and timber purlins produce "clouds" of color. Each of the four chambers has a different colored frit on its glass, providing a subtle range in hues from pink to blue, green, and white. A computer program controls the changing colors, so light seems to move from one chamber to another. Due to budget constraints, only two of the glass pavilions are fully equipped with the fiber optics and LEDs, though all have the channels needed to accommodate the lighting. Photographs (left) show the math/science light chamber, which is the school's main entry, during phases of the color cycle. C.A.P.

1. Math/science light chamber and entry
2. Math/science classrooms
3. Faculty offices
4. Art light chamber
5. Administration
6. Student commons
7. Humanities light chamber
8. Humanities classrooms
9. Library light chamber
10. Library
11. Sports terrace
12. Art classrooms
13. Media center
14. Lockers
15. Library courtyard
16. Science courtyard

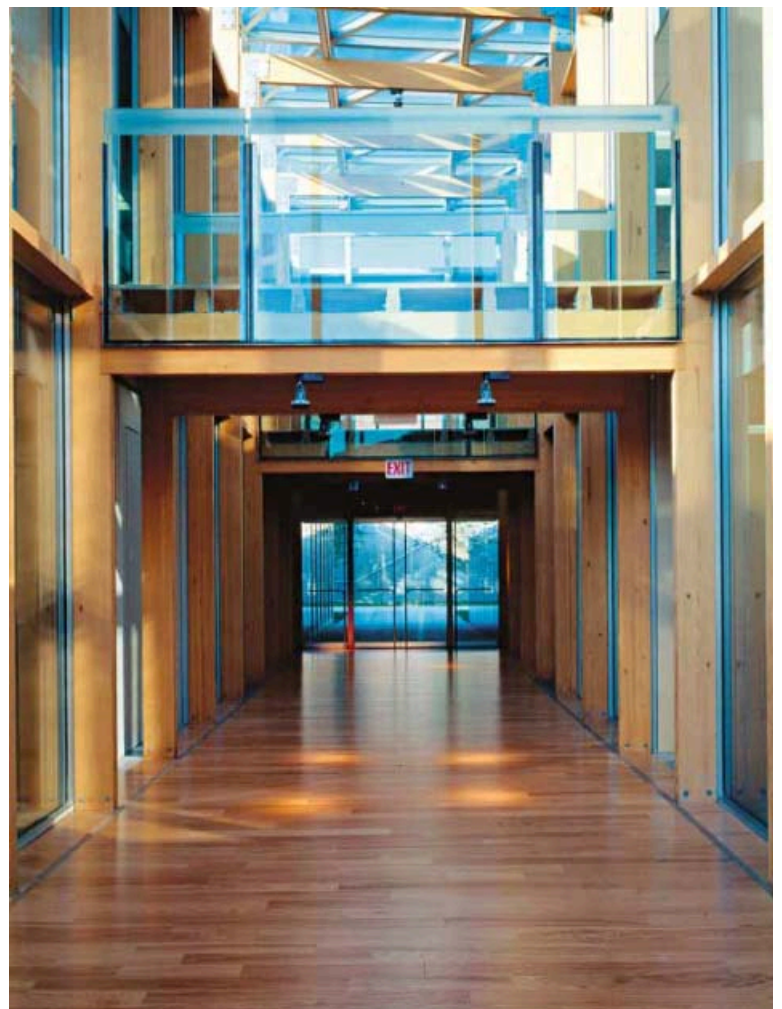




Duffy sees Greenwich Academy as “a beginning,” the first in a series of projects that explore the nature of collaboration and draw a sense of unity out of programs pulled in many different directions by many different forces. He and his studio at SOM are currently finishing work on a public elementary school in Fairfield, Connecticut, that opens in August, and they are collaborating again with James Turrell on a building at Deerfield Academy, which will be completed in the summer of 2005. “Instead of bringing him in during design development, we’ve been working together from the very beginning of the project,” notes Duffy with pleasure. Other projects he sees as exploring similar ideas include a performing arts school in Camden, New Jersey, and the Skyscraper Museum, a small but dazzling interior space that recently opened in New York’s Battery Park City.

Duffy talks about design that unifies different forces, bringing old and new, upper and lower, indoors and out, into equilibrium and harmony. When discussing collaboration with artists and other designers, he speaks of “conciliation,” a word not found in many architects’ vocabularies. “The kind of work I’m interested in requires a level of trust between collaborators and doesn’t involve the master stroke of the great architect.” ■

The library’s light chamber runs on axis with the school’s original mansion (above). The light chamber in the art department (right) leads out to the playing fields.



Metal/glass curtain wall: Suntech of Connecticut; Interpane Glass

Skylights: Interpane Glass

Glue-laminated wood: Unadilla Laminated Products

Planted roof: American Hydrotech

Carpeting: Karatan; Mohawk Commercial

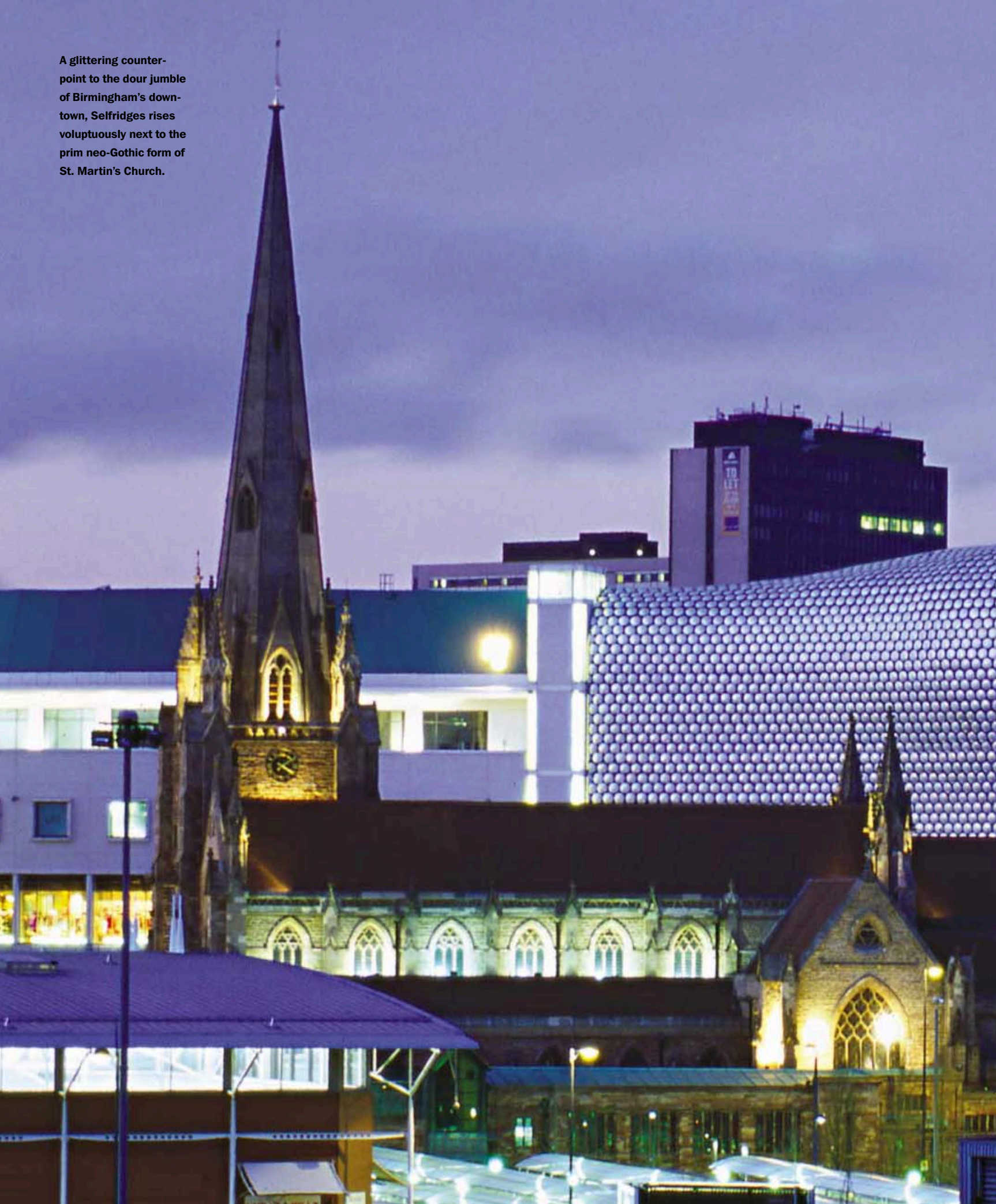
Interior ambient lighting: Zumtobel Staff

Reception furniture and library desk: Custom by Skidmore, Owings & Merrill

Metal doors: Suntech of Connecticut

Brick walls: Connecticut Mason/Joe Capasso Mason

A glittering counter-
point to the dour jumble
of Birmingham's down-
town, Selfridges rises
voluptuously next to the
prim neo-Gothic form of
St. Martin's Church.



Future System's curvaceous outpost in Birmingham has helped turn the dowdy **SELFRIDGES** department-store chain into a must-shop destination

By James S. Russell, AIA

A clay model in Future Systems' London office could be titled *Reclining Woman's Torso*. It is rough and barely suggests architecture. But it has come to life as the four levels and 240,000 square feet of a Selfridges department store. Sensuously true to the early study, its rump gently swells outward and upward. And it looks just a bit squished at the bottom, creating the same effect the weight of real flesh would.

The building has become an instant landmark since it opened last fall in Birmingham, the U.K.'s second-largest city. In the retailing

industry, which had resigned itself to the inevitability of department-store decline, it's a sensation—compared often to the Bilbao Guggenheim. In London, Selfridges flagship store remains a columned, city-block-size palace (designed by Daniel Burnham) on Oxford Street. But Birmingham is the crowning achievement in the transformation of a dowdy, middle-of-the-road chain to a hip, must-shop destination.

Vittorio Radice, an Italian retailer inevitably described as “visionary,” refashioned the chain, focusing on younger shoppers who had regarded Selfridges and many of its competitors as the kinds of places

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to be visited only with doting relatives determined to find something practical. Radice brought back the theatricality that had historically defined the department store, turning the London flagship into a shrine to Bollywood, for example. “Body Craze,” another promotion, featured 600 nude volunteers riding up and down the escalators.

In the heyday of the department store, celebratory architecture was part of the appeal. In Birmingham, Radice restored that tradition, too. A developer offered him an à la carte package: a site in a new urban mall at the center of Birmingham’s knot of twisting shopping streets, including a ready-to-go design for a boxy volume wrapped in a queasy mix of Tuscan stripes and Modernist steel beams. Like the rest of the mall, it was a design intended to appeal to everyone by offending no one. It was

Project: Selfridges Department Store, Birmingham, U.K.

Architect: Future Systems—Søren Aagaard, Nerida Bergin, Sarah Jayne Bowen, Lida Caharsouli, Julian Flannery, Harvinder Gabhari, Dominic Harris, Nicola Hawkins, Matthew Heywood, Candas Jennings, Jan

Kaplicky, Amanda Leveté, Iain MacKay, Glenn Moorley, Andrea Morgante, Thorsten Overberg, Angus Pond, Jessica Salt, Severin Soder, project team

Engineer: Arup (structural, mechanical, fire protection, facade engineering)

Project manager: Faithful + Gould

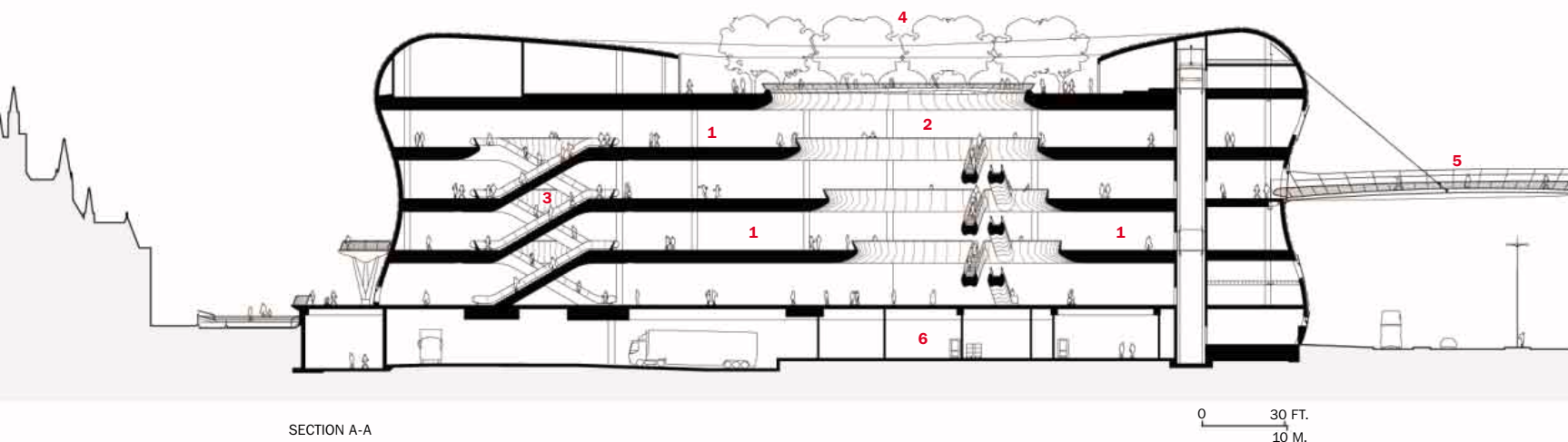
General contractor: Laing O’Rourke





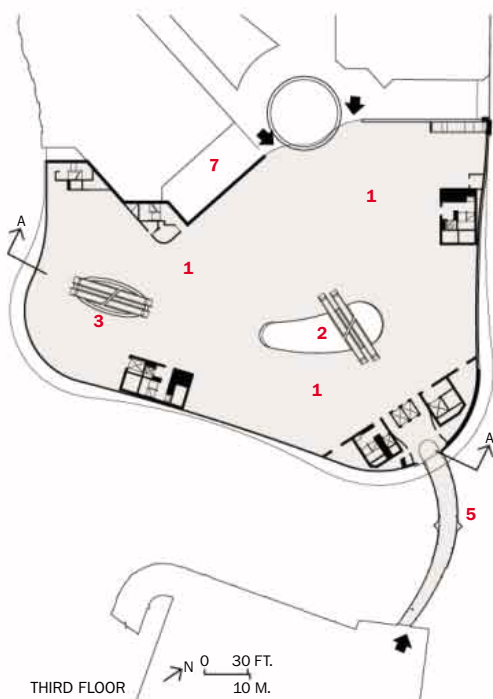
Attached to a generic mall (visible at left in this photo), the undulating building form follows the street pattern and a two-level change in grade. Arup devised an under-floor box beam so that Kaplicky could keep a

footbridge (connecting the store to a parking structure) visually light in weight (opposite, top). Cable stays suspend it from the frame of a flying-saucer oculus straight out of a comic book (opposite, bottom).



SECTION A-A

1. Selling space
2. Atrium
3. Secondary atrium
4. Garden and gym (unbuilt)
5. Bridge to parking structure
6. Loading and service
7. Mall entry below
8. Selfridges
9. Mall
10. St. Martin's Church
11. Parking structure



THIRD FLOOR

exactly the retail image that Radice had spent years erasing. "He didn't think it was good enough," explained Jan Kaplicky, a partner in Future Systems. "How would you get people there?"

Radice invited Future Systems and two other firms into a process that fit somewhere between an interview and a competition. Going in, Kaplicky and partner Amanda Leveté were anything but a shoe-in. They had designed much, but built little, though their experience includes small designer boutiques in New York and London. They didn't have a "commercial" profile in a retailing industry ruled by last month's sales data. But they proved to have the shopping-culture gene. Leveté and Kaplicky prepared sketches and the evocative model to suggest possibilities for Radice. "He understood very well that the image could do what he wanted, which was to draw people from a 30-mile radius," said Kaplicky. It wasn't the building alone, he added, but the promise it signaled of what would be found within.

The memorable exterior is not pure image. It works as well because it follows the contours of the streets surrounding the site, which dates from medieval times. "The challenge with the skin was to get the curved profile done for a standard-cladding price," explained Edward Clark, the project manager for Arup. Since the exterior curved both vertically and horizontally, it couldn't be conveniently broken down into panels or "unscrolled" for conventional geometric engineering analysis. The team eventually devised a means to spray concrete over metal lath in

FUTURE SYSTEMS HAS BUILT AN ANATOMICAL TEASE: ARE THOSE OPENINGS LIPS? IS THAT TRIM MASCARA?

one-story-high ribbons. The lath was framed to arms projecting from scaffolding and hung permanently from brackets extending from beams at the floor edge. Contractors sprayed waterproofing on top of the concrete, then attached an insulating layer, and a finish skin of synthetic stucco painted what Kaplicky calls Yves Klein blue. The 15,000 anodized-aluminum disks that cover the surface—giant sequins inspired by a glittering, form-fitting Paco Rabanne dress—attach to fasteners anchored in sockets cast into the sprayed-concrete substrate. Their shiny cheerfulness protects the painted surface and disguises substrate imperfections.

The curving shop windows and entrance openings at the base also pose an anatomical tease: Are those openings lips? Eyes? Can that trim be seen as lipstick? Mascara? The shopper doesn't have to see the spangled exterior as a female form or anything else. Its tactile appeal bypasses the brain. From a distance, the fish-scaled skin looks as if it is stretched tautly over that swelling shape, rising tantalizingly out of the



PHOTOGRAPHY: © NICHOLAS KANE/ARCAID (OPPOSITE, TOP RIGHT); PETER DURANT/ARCBUE (OPPOSITE, TOP LEFT AND BOTTOM TWO)



Selfridges may have the massive and amorphous floor plates of the usual mall anchor store (plans, opposite), but it eschews the rack-choked, fluorescent-lit

norm. Instead, there is spatial fluidity, a techno-nightclub ambience dashed with color, and simple but artfully brash and ingratiating store fixtures.



city's prosaic dirty-brick jumble. No sign screams Selfridges.

Conventional retailing wisdom deems daylight a no-no, since it could lure buyers' eyes away from the merchandise. But Kaplicky and Leveté proposed the skylighted, boomerang-shaped atrium from the beginning, and Radice understood its significance: "Orientation," said Kaplicky. "It is a key aspect of the department store." But also, "You see other people shopping, and that's important."

While the firm designed layouts for the lowest-level interiors—suspending molded-plastic space-age store fittings from the ceiling—most of the interiors are by others: Eldridge Smerin, Stanton Williams, and Cibic & Partners. Also, Selfridges rents a considerable amount of its store space to brand concessionaires. It is a testament to the chain's merchandising staff that the store personality is so distinct and so consistent in spite of the design diversity. It has traded in the conservative, polished-woodwork dignity and the labyrinthine, rack-choked floors of the old-line department store for a clean, crisp spaciousness. There's an endless inventiveness in the design of display racks and low tables, and in the theatrical use of lighting,

RADICE'S STRIPPED-DOWN DEPARTMENT STORE APPEALS THROUGH ITS FRESH, NERVY, INFORMAL YOUTHFULNESS.

which is far more appealing than the unvaried field of fluorescents that typifies the conventional department store. The large, unimpeded floor areas tend to blur the borders between brand concessions.

Overall, the spirit is unabashedly contemporary. Radice stripped down the department store to the degree that its appeal lies almost solely in its fresh, nervy, informal youthfulness. There are lots of kicky blouses and tons of T-shirts, but few ties and only name-brand business wear. Even "classic" lines like Burberry and Ralph Lauren have gone light and contemporary for this store. Furniture? Midcentury Modern, only. "It interests the 18-year-old by not being stuffy," says Kaplicky.

In the 19th century, department stores thrived as one of the few destinations women were permitted to enter unaccompanied by a man. Now men and women who work long hours have supplanted the ladies of leisure, and they have short attention spans. Radice caters to these customers by crafting the same kind of recognizable image that specialty retailers have created. Those who strongly relate to the store's contemporary feel will probably find what they're looking for. Radice's scheme leaves everyone else to competitors. That's where the risk lies, and the strategy—for all the hoopla—has yet to definitively succeed. In a tough economy for retail, Selfridges was recently reported to outperform by declining less than its competitors.

Radice himself has been lured to Marks & Spencer, where he is expected to work his magic again. A John Pawson—designed furniture store has opened. Other M&S projects are said to be in the works by Herzog & de Meuron, Ian Ritchie, and John McAslan. The Selfridges chain was sold to Wittington Investments of Canada, which cancelled Radice's plans for a store in Bristol by Toyo Ito and one by Terry Farrell in Newcastle. An extension of the London store by Foster and Partners is still planned, however. There's no major retail executive who has not paced Selfridges' linoleum floors, but the future of Radice's trailblazing vision—and the role insightful architecture can play in it—has yet to be assured. ■

Sources

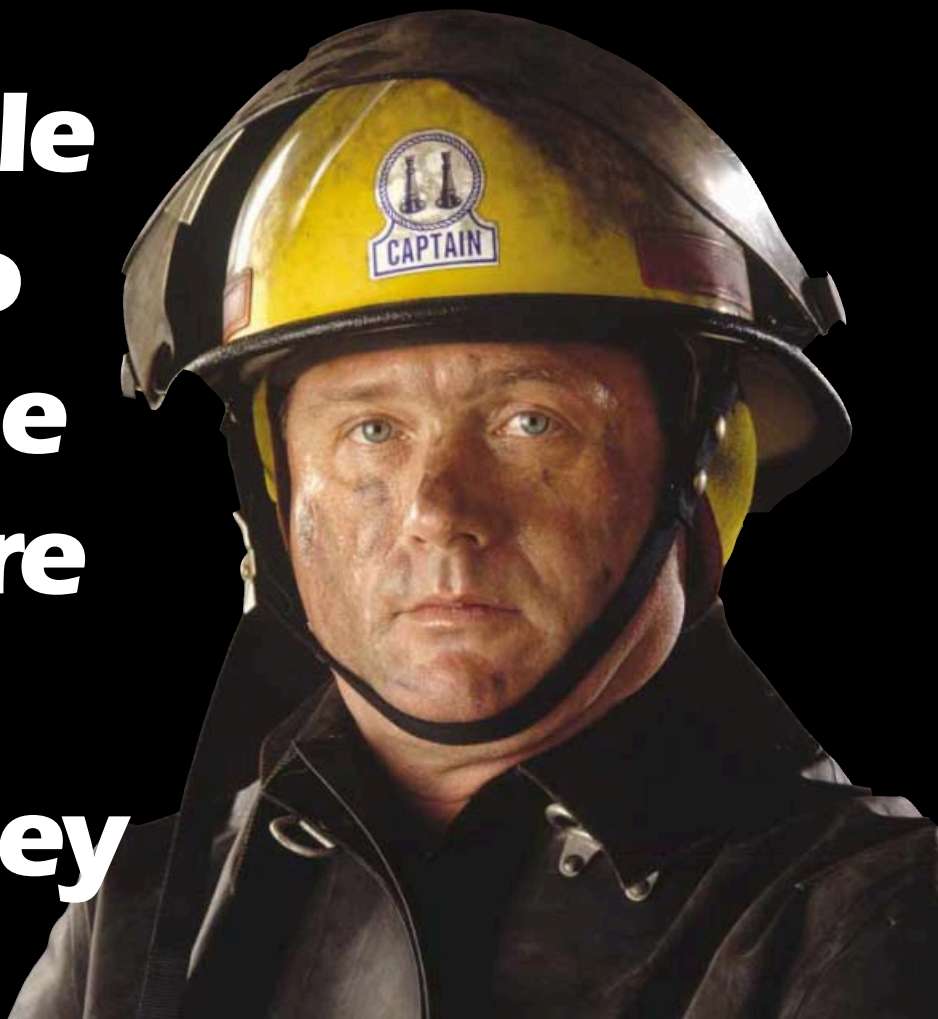
Spray-on concrete: Shotcrete
Metal discs: James + Taylor
Fiberglass, glass-reinforced plaster: Diespeker

For more information on this project, go to Projects at www.architecturalrecord.com.

The theatrical heart of the store is the atrium, filled with the movement of people (right) and bathed in daylight (opposite, top). The atrium's generous size contravenes retail convention by depriving the store of selling space, but it pays off by offering unobstructed views to other floors (opposite, bottom), where appealing displays can lure shoppers onto the escalators. The lacquered cladding is fiberglass and glass-fiber-reinforced plaster.



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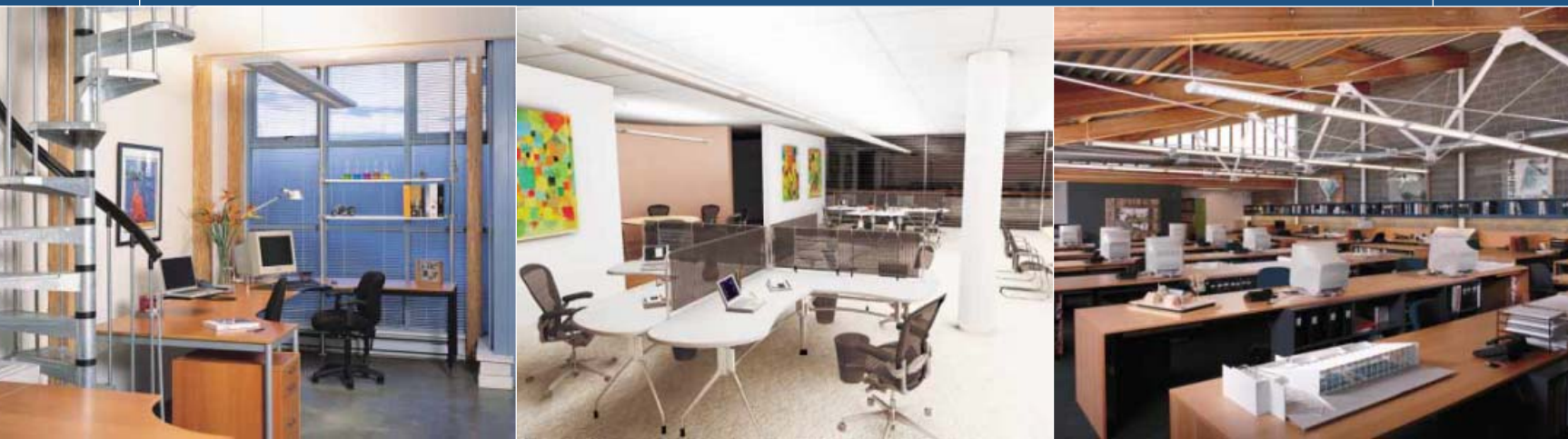
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PEDESTRIAN BRIDGES

Iconic Connections

ARCHITECTS ARE PRODUCING STUNNINGLY DESIGNED BRIDGES WITH RADICALLY DIFFERENT SHAPES AND MATERIALS.

By Suzanne Stephens

One of the most dazzling examples of architectural form-making today is without doubt the bridge. True, the bridges of Robert Maillart have long been a staple of courses in the history of Modern architecture, as has the Brooklyn Bridge, designed by John and Washington Roebling—which Montgomery Schuyler praised in *RECORD*'s pages a hundred years ago. Yet those bridges so admired by architects were executed by engineers. Usually, when architects have been involved in bridge design, their role has been to aestheticize the engineering, a tendency still current. However, many architects are often more involved integrally in the design, bringing a sense of scale, proportion, and elegance to spanning space. They collaborate closely with engineers or, in the case of Santiago Calatrava, are engineers as well.

Pedestrian bridges in particular have lured the architect, as seven of the eight bridges on the following pages attest. (The exception is a railroad bridge.) As Hugh Pearman points out in the introduction to *30 Bridges*, by Matthew Wells (Watson-Guptill, 2002), such bridges, intended for people on foot, cycle, or wheelchair, are designed with an eye to the particular experience of moving relatively slowly through space. This kinesthetic experience makes the most of an architect's contributions in matters of detail, use of materials, and composition of elements.

The bridges shown here serve other functions, as well. In several examples, bridges act as symbolic markers for an urban area undergoing rejuvenation or, in the case of Corning, as a gateway to a corporate complex. In one case, in Rijeka, Croatia, the bridge plays a dual role as both a war memorial and a link. Certain bridges, such as the Floral Street Bridge in London, are almost hidden in their natural or urban contexts, which makes their discovery all the more captivating.

Technical advances enable most of these bridges to be ever lighter and more evanescent, notably those designed by Santiago Calatrava and Wilkinson Eyre Architects. Others were assembled in unusual ways: The Webb Bridge in Melbourne, Australia, was floated on barges to its site, while major portions of a bridge in Boudry, Switzerland, were flown in by helicopter. (For more on the arresting technical accomplishments of certain bridges, see *Building Science*, page 279.)

This building type continues to proliferate, often resulting from competitions, especially in Europe, and from an ever-increasing awareness of its power to attract attention to a site. After Calatrava's first bridge in the U.S. opens in Redding, California, in July, we will be able to see how successfully this architectural form inspires additional arresting connections in the American landscape. ■



1.



2.



3.



4.



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8.

1. Webb Bridge, Melbourne, Australia; 2. Passerelle on the Areuse, Boudry, Switzerland; 3. Puente de la Mujer, Puerto Madero, Buenos Aires; 4. Memorial Bridge, Rijeka, Croatia; 5. Floral Street Bridge, London, England; 6. Central Street Bridge, Worcester, Massachusetts; 7. Sail Bridge, Swansea, Wales, United Kingdom; 8. Houghton Park Pedestrian Skyway, Corning, New York.

For more information on these projects, go to Projects at www.architecturalrecord.com.

PHOTOGRAPHY: © GOLLINGS PHOTOGRAPHY (1); THOMAS JANTSCHER (2); ALAN KARCHMER (3); ALJOSA BRAJDIC (4); NICK WOOD (5); JEFF GOLDBERG (6); NICK WOOD (7); ROBERT BARKER (8)

Webb Bridge

Melbourne, Australia

1

DENTON CORKER MARSHALL AND ARTIST ROBERT OWEN SPARK UP THE DOCKLANDS WITH A SERPENTINE PEDESTRIAN AND CYCLIST BRIDGE.

By Suzanne Stephens

Architect: Denton Corker Marshall Architects (architects have policy of not naming team members)

Artist: Robert Owen

Client: Mirvac Corporation/VicUrban (Melbourne's urban development agency)

Consultants: Arup—Peter Bowtell (structural); Arup Lighting—Paul Beale (illumination)

Span: 361 feet

Cost: \$1.75 million

Completion date: November 2002

Sources

Steel: Geelong Fabrications

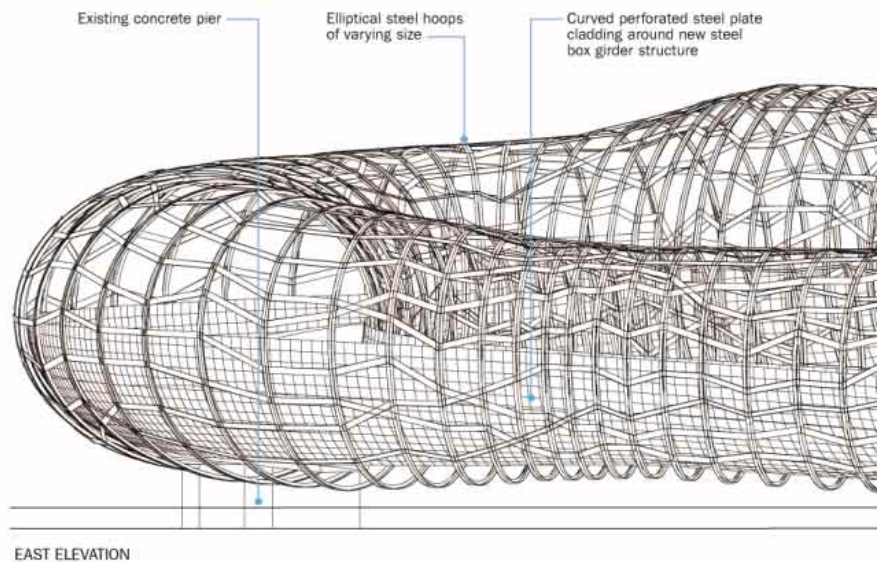
Sometimes a bridge is as much a destination as a passage. This seems to be the case with the slinky, glimmering, steel-lattice Webb Bridge in Melbourne, Australia. The pedestrian bridge, designed by artist Robert Owen with architects Denton Corker Marshall (DCM), obviously does not provide the most direct path from the Docklands on the north side of the Yarra River to new residential development taking shape on the south side. But it enhances the transit experience for bicyclists, pedestrians, and the disabled.

Program

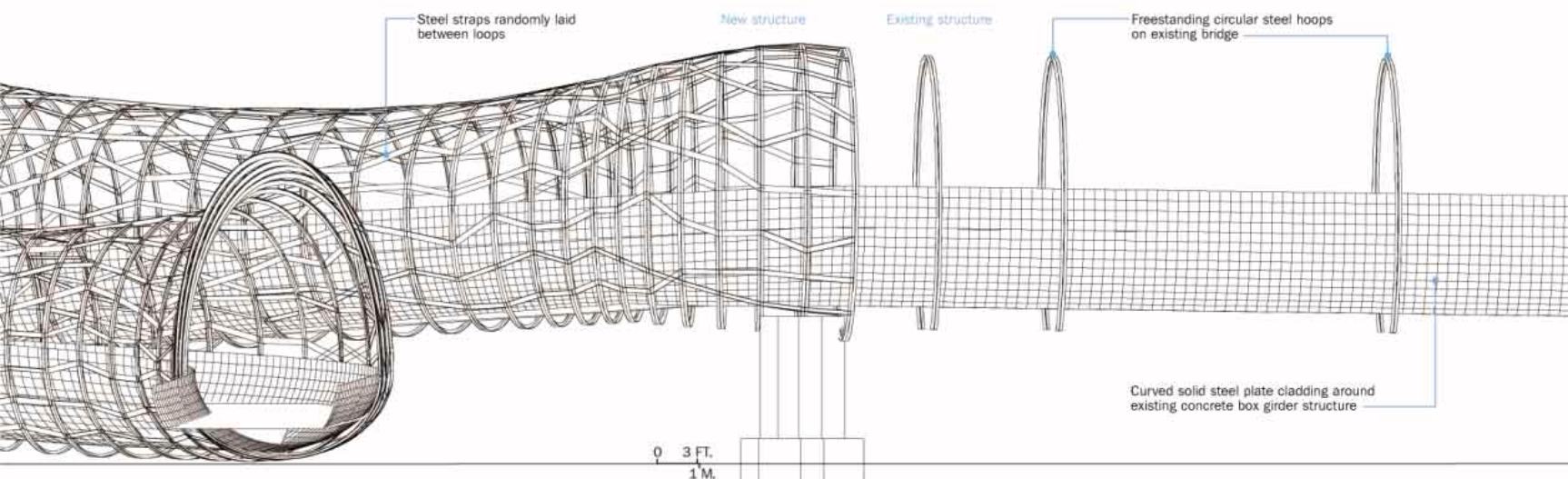
As part of the redevelopment of Yarra's Edge, former wharves and docks near Melbourne's central business district, the Docklands Authority required the developer of the residential complex, Mirvac, to contribute 1 percent of the budget to public art. In this case, the money went for the bridge. Robert Owen, an Australian artist known for his mixed-media installations, and Denton Corker Marshall, architects of the Melbourne Museum (RECORD, January 2001, page 70), won a competition with a writhing, tubular structure that incorporates two segments of the former Webb Railroad Bridge. In addition, the design offers access to the disabled via a ramp linking higher and lower elevations without a steep incline.

Solution

Owen's and Denton Corker Marshall's



For more information on this project, go to Projects at www.architecturalrecord.com.



It doesn't breathe, but the Webb Bridge does come alive by night and day, when its yawning mouth disgorges visitors from the north side of the Docklands to the south side.



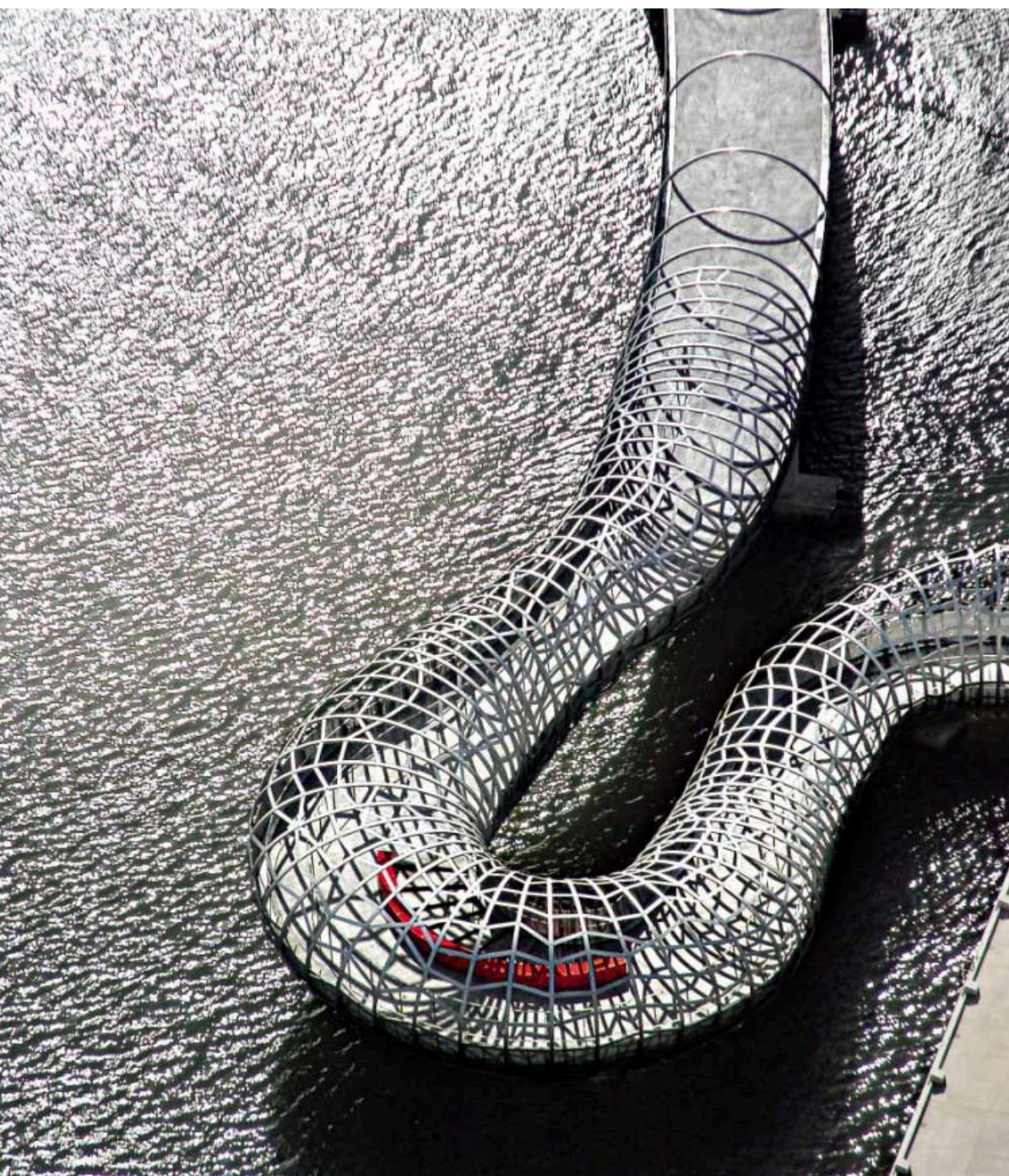
From afar, the elliptical hoop-frame bridge glints by day and glows by night; the tubular web takes visitors from the south entrance (opposite, top) to the north side of the Yarra River.

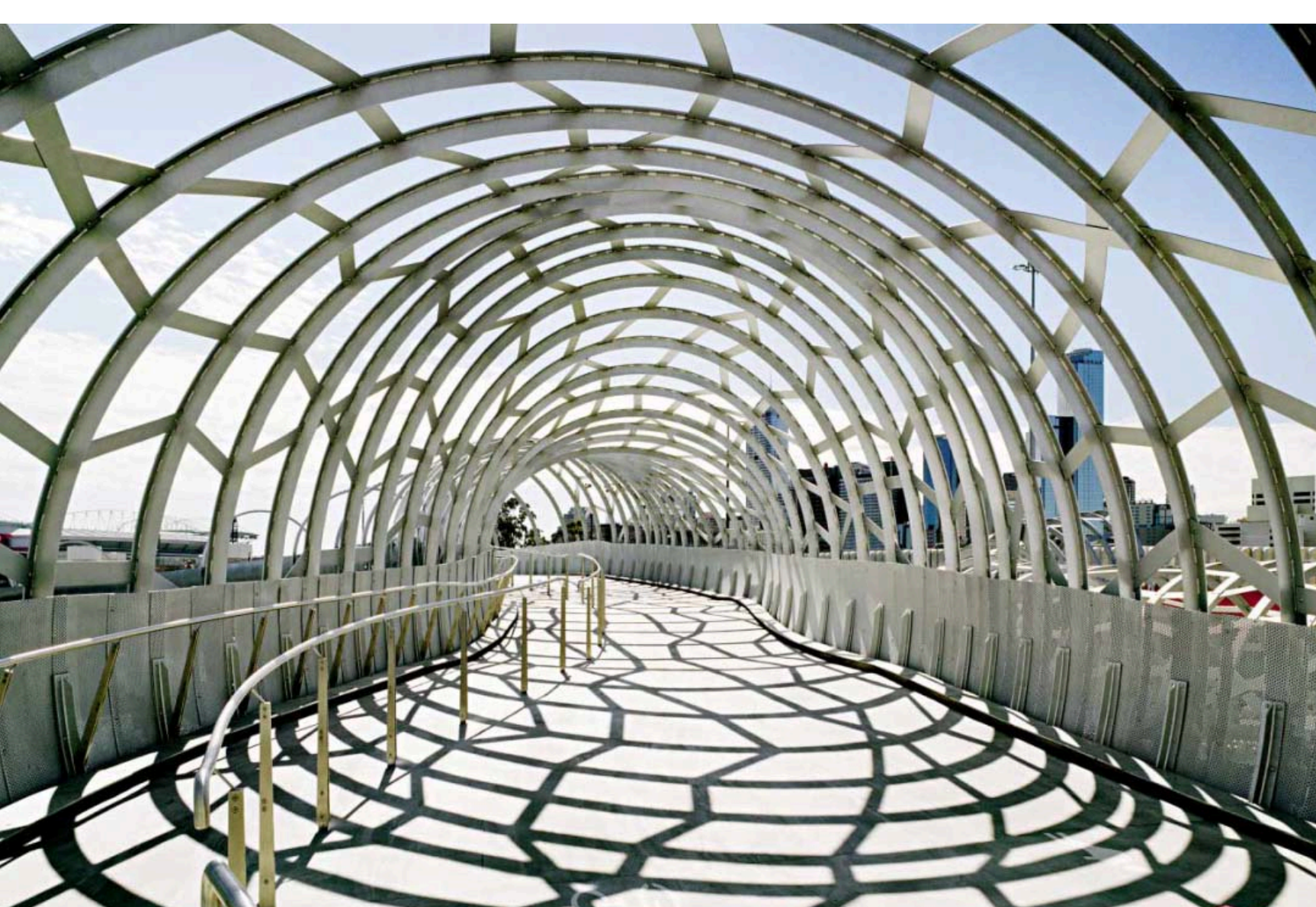
design recalls an aboriginal eel trap, except that it is fabricated with a hooped steel frame tied by flat, laser-cut steel straps rather than woven sticks. DCM used computer-aided three-dimensional modeling to arrive at the 20-foot-high hoops of various sizes and spacing, while the Melbourne office of Arup engineers came up with a structural solution of steel box girders, cranked to allow a curved form to take shape. The box beams, covered with a concrete slab and encased in perforated-steel cladding, and the loopy, weblike casing were fabricated on two barges in Victoria Harbor, then floated up the river and dropped into place during a low tide. The new structure was then linked with the remaining concrete box girders of the old railroad segments.

By day, the coiled bridge glints in a reptilian fashion against the Yarra River; by night, illumination conceived by Arup Lighting causes it to glitter like a silvery roped necklace reflected against a dark mirror. To create an eerily glowing atmosphere within the walkway, Arup backlit the floor with white cold-cathode lights mounted under the side edges. To keep the light from being cast too high in the sky, it installed pairs of 35-watt, PAR30, metal-halide lights at the handrail level that bounce up against the inner surface of the arches.

Commentary

A curving bridge shared by both pedestrians and bicyclists suggests that bicyclists may have to move more slowly than they may like. Nevertheless, the biomorphic shape presents a symbolic marker for the Docklands area, as well as a meeting place, and a memorable connection from one area to another. The collaboration between artist, architect, and engineer clearly demonstrates the vital public contribution of such arranged marriages. ■





Passerelle on the Areuse Boudry, Switzerland

2

GD ARCHITECTES CREATES A SINUOUS LINK IN SECTION AND PLAN TO SPAN A SMALL RIVER.

By Sarah Amelar

Architect: *GD Architectes—Laurent Geninasca, Bernard Delefortrie, partners; Christine Perla, collaborator*
Consultants: *Chablais et Poffet (civil engineers)*

Span: *90 feet*

Cost: *\$117,000*

Completion date: *April 2002*

Sources

Metal fabrication: *Steiner*

Wood fabrication: *Tschäppät*

This heavily wooded site in western Switzerland lies so far from paved roads that architects Laurent Geninasca and Bernard Delefortrie had to prefabricate the main components of their footbridge and fly them in by helicopter. Yet the gorge's wild and remote character was exactly what their firm, GD Architectes of Neuchâtel, sought to maintain.

Program

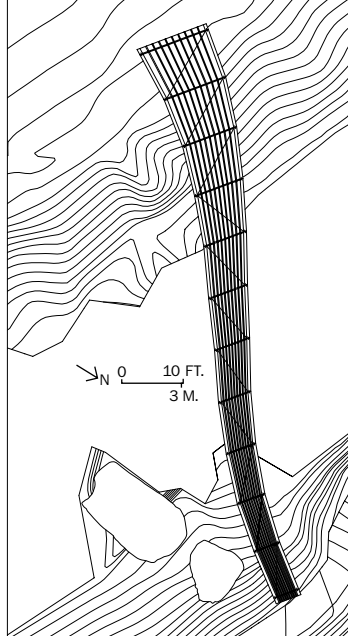
Having won an invited competition for the commission, GD Architectes had to reconcile two very different banks along the Areuse River in Boudry: one formed by steep, craggy rocks, and the other by a low, open field. The hikers' footbridge needed to span about 90 feet and arc high enough to accommodate rising water.

Solution

Working with engineer Laurent Chablais of Chablais et Poffet, the architects created a sinuous span that narrows in width, from 11.5 to 3.8 feet, and constricts sectionally as it approaches the more vertical bank. The structure, a gentle S-curve in plan and elevation, appears to emerge organically from the forest. Finely slatted with blades of dark-stained fir, the bridge's sides and top transparently screen views, rather than obstruct them. The parallel boards filter the sun's rays, much as the branches of trees cast dappled light. With the delicacy of a cricket cage, the thin wooden blades converge toward the



For more information on this project, go to Projects at www.architecturalrecord.com.



narrower end, intensifying the sense of curving momentum.

Deceptively simple, light, and graceful in appearance, the load-bearing, steel-framed structure—essentially a square tube—performs as a box girder, distributing bending and torsion loads through a triangulated system of wood and steel slats on all four sides, ultimately transmitting the forces to the ground at either end. To accommodate temperature variations affecting bridge length, the span's support remains fixed at its wider end and mobile at the other, where the loads would be lighter.

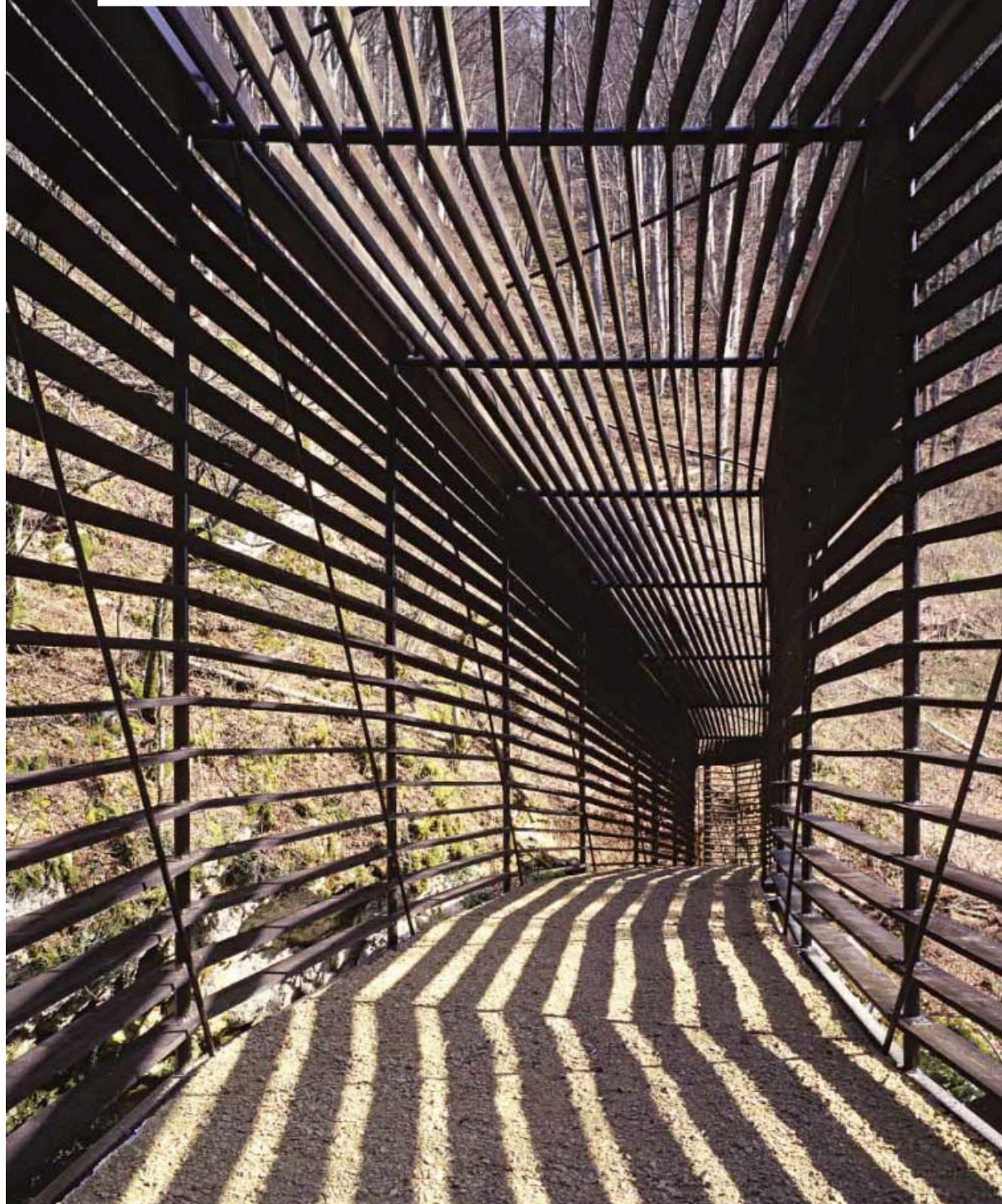
Given the variable section, the footbridge was designed, says Chablais, with “no two identical pieces.” The act of assembling it—a logistical challenge in itself—required precise choreography. As the engineer recalls, the process started with moving two electrical lines out of the way, followed by a Tamov Russian helicopter delivering the structure's three major components on provisional scaffolding. Then, miraculously, the prefabricated footbridge was assembled in a single day.

Commentary

The exacting calculations yielded a structure remarkably harmonious with the woodland gorge. Geninasca and Delefortrie, who speak of “listening to a place,” joined forces with Chablais to produce a bridge that appears both surprising and completely integral to its natural setting. ■



The curving form and converging slats, accentuated by the effects of perspective, give the bridge a gentle dynamism that remains compatible with the woodland setting and rushing water below.



Puente de la Mujer

Puerto Madero, Buenos Aires

3

IN ARGENTINA'S CAPITAL, SANTIAGO CALATRAVA GRACEFULLY COMBINES A PIVOTING SPAN WITH A SINGLE-PYLON SUSPENSION SYSTEM.

By Sarah Amelar

Architect/Engineer: *Santiago Calatrava*

Client: *Grupo González*

Lighting: *Santiago Calatrava*

Span: *525 feet (overall);
335 feet (rotating section)*

Cost: *\$5 million*

Completion date: *December 2001*

Sources

Reinforced concrete: *Galtieri
Constructions*

Steel contractor: *URSSA, Spain*

Mechanical tower: *DEMAG/
Mannesmann, Spain (supplier)*

Though many of Santiago Calatrava's bridges—nearly 40 built so far—feature inclined pylons or arched forms, each example pushes the limits of structural ingenuity and sculptural grace in a different way. Following his innovative, harplike 1992 Alamillo Bridge in Seville, Spain, for example, this architect/engineer has repeatedly reinvented the possibilities for asymmetrical, single-pylon, cable-stayed suspension systems—most recently with his Sundial footbridge, under construction in Redding, California, and the pivoting Puente de la Mujer at Puerto Madero in Buenos Aires.

Program

In 1992, Buenos Aires launched an ambitious and strategic city-planning initiative to reclaim its neglected waterfront—focusing in part on the late-19th-century port of Puerto Madero. The city's phased plan for this district encompasses the preservation of existing warehouses and wharves; the creation of a mixed-use complex with museums, art galleries, and university facilities; and the erection of five new bridges, including the Puente de la Mujer by Calatrava. Here, he needed to span 525 feet across the Rio de la Plata, providing a pedestrian crossing and linking plazas on either embankment while retaining full access by water to a nearby dock.



Solution

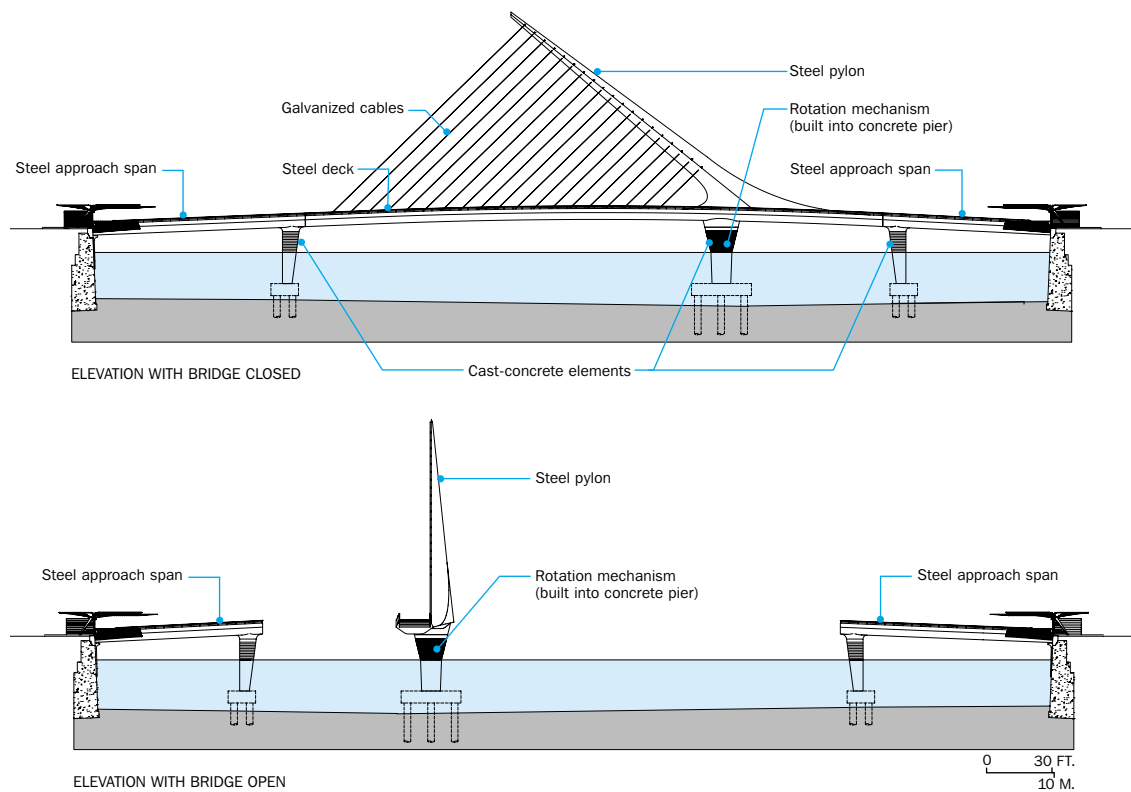
Although Calatrava has designed a wide range of kinetic structures in the past—including the Médoc Swingbridge in Bordeaux, France, and the Milwaukee Art Museum

[RECORD, March 2002, page 92]—the Puente de la Mujer marks his first integration of a rotating span with an inclined, single-pylon suspension system. Set between fixed segments, the 335-foot-long cen-

For more information on this project, go to Projects at www.architecturalrecord.com.



Time-lapse photography (this page) shows the bridge's potential for multiple positions as it swings open. The span provides a wood-planked crossing for pedestrians (opposite).



tral span of the Buenos Aires bridge can turn 90 degrees to allow tall boat traffic to flow freely. Though it's rarely necessary to open this bridge—"maybe several times a year," according to the architect—he says he designed the structure "to rotate whenever it's needed, even every day."

Dynamic in its sharp, arrowlike precision, the pylon, holding taut rungs of cables, reaches a height of 128 feet. Its great triangulating V-form leads with a crescendo from the axis of a major avenue, gesturing toward the new, higher part of the city on the opposite bank. In contrast to Seville's Alamillo Bridge, where a stationary, canted-steel vertical element contains concrete to counterbalance the weight of the deck (and eliminate the need for a second set of stay cables), here, the steel pylon remains hollow, keeping it relatively light. Whereas the cable-strung V creates an obtuse angle in Seville, it forms an acute angle in the Buenos Aires structure, with concrete inserted as counterweight just behind its apex. The resulting silhouette, supporting a wood-planked pedestrian walkway, appears remarkably minimal and deceptively simple.

Commentary

Occupying a rare position in the architectural world, Calatrava has simultaneously performed as an engineer who is enlightened and an architect who builds bridges (among other structures) prolifically. In the process of revisiting this spanning form, he has managed to distill its essence, providing a clear and poetic—yet fully functional—essay on the meeting of static and dynamic forces. ■

The bridge rests on cast-concrete supports with a rotating mechanism directly below the pylon's base (left). The V-form widens toward the newer, higher part of the city (opposite, bottom and top left). The span's completely open position (opposite, top right) allows all river traffic—including tall ships—to flow freely.





Memorial Bridge

Rijeka, Croatia

4

3LHD ARCHITECTS CREATE A FORCEFULLY MINIMAL MONUMENT THAT ALSO SERVES AS A FOOTBRIDGE.

By Sarah Amelar

Architect: 3LHD—Sasa Begovic, Marko Dabrovic, Silvije Novak, Tanja Grozdanic, principals in charge; Sinisa Glusica, project architect; Koraljka Brebric, Milan Strbac, designers
Client: City of Rijeka
Consultants: Jean Wolf, Zoran Novacki, Dusan Srejjic, Berislav Medic (structural engineers); Osram—Aljosa Sribar (lighting)

Span: 123 feet
Cost: \$1.8 million
Completion date: December 2001

Sources

Aluminum planks: Sapa, Sweden (decking)
Cast glass: Ciril Zlobec (prisms)

After violent conflict in the Balkans, the Croatian town of Rijeka, some 30 miles south of Trieste, held a competition for a structure both symbolically charged and functionally efficient: a monument to Croatian defenders, a memorial to an era of death and destruction that would also serve as a footbridge. With a strikingly abstract yet contemplative scheme, the Zagreb firm 3LHD won first prize.

Program

As the city continues to evolve, this pedestrian bridge/memorial will occupy an increasingly important position, connecting Rijeka's historic center with its former port, an area to the east slated to become a public park. The structure needed to span at least 123 feet across a canal. And a small plaza, or gathering area with benches, at the bridge's east end also comprised part of the program. But the greatest challenge lay in maintaining a balance between the form's utilitarian role as bridge and its commemorative qualities as monument.

Solution

The architects devised an elegantly thin and distinctive L-configuration that equates the horizontal walking surface with the vertical slab (or memorial) in both importance and materials. The upright leg, rising 29.5 feet on the east bank of the canal, forms a wall with a slot just wide enough for the passage of one person. Reminiscent of a tombstone, the

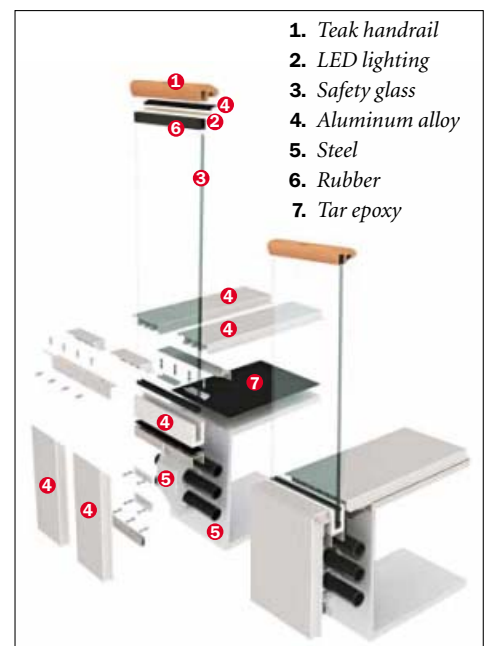
tall, geometrically pure wall confronts you, demanding that you sidestep or penetrate it, single file. Boldly blocking views, the slab prompts reflection on the nature of a place psychologically transformed. Visually, the monument's stripped-down Minimalism plays starkly against the backdrop of the old city.

3DLH gave the L-form strong continuity by covering both its legs in aluminum-alloy planks, offering a relatively non-skid surface with corrosion resistance. The horizontal component, measuring 154 by 16 feet and a mere 21.6 inches thick, features a steel girder structure, while the vertical element relies on reinforced concrete. Pilotis, also of reinforced concrete, support the walkway, edged by panels of safety glass with teak handrails.

The steel girder, fabricated in a local shipyard, arrived as a single 150-ton piece on a barge especially designed to sink down and release its cargo with changing tides. So the very act of erecting the Memorial Bridge became a major event.

The architects enhanced the structure's floating effects and created a mystical glow at night by inserting LEDs under the handrails and behind cast-glass prisms in the edges of the upright slab.

In the plaza, cantilevered, L-shaped benches of steel and teak

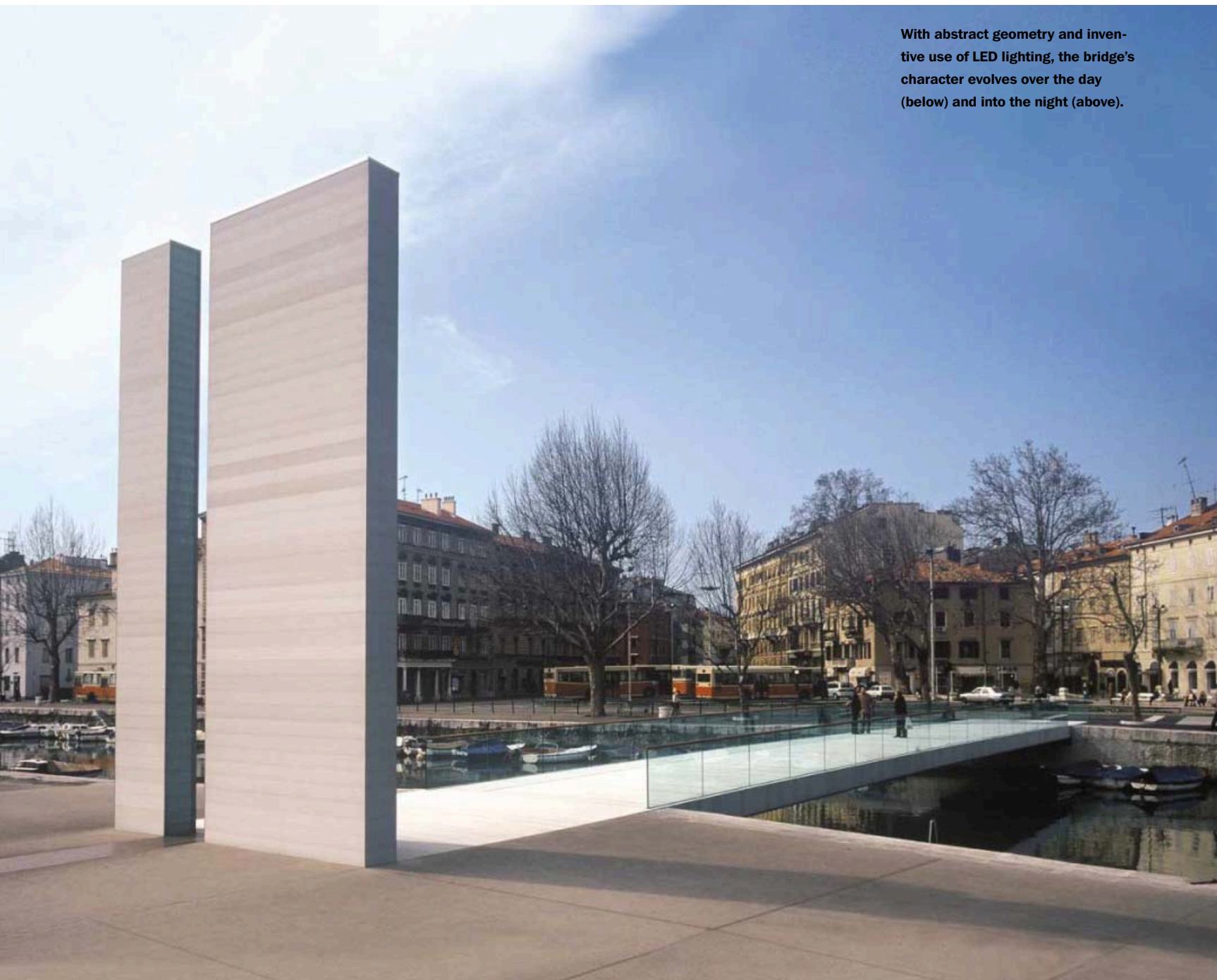


echo the bridge form, while a scar-like strip of crushed brick and epoxy resin, incised in the ground, extends from the wall slot—symbolizing Croatia's blood-soaked earth.

Commentary

While serving as a footbridge, this span is hardly one to hurry across. With its tall, imposing end wall, the structure encourages slow walks, contemplative lingering and gatherings, day and night. 3LHD expanded the project's scope by inviting artists from other disciplines to continue exploring concepts of memorial, patriotism, and war. From this bridge, participating artists have already launched three films and a book. ■

For more information on this project, go to Projects at www.architecturalrecord.com.



With abstract geometry and inventive use of LED lighting, the bridge's character evolves over the day (below) and into the night (above).

Floral Street Bridge

London, England

5

WILKINSON EYRE HAS GIVEN COVENT GARDEN A SYMBOL OF ARTISTIC ASPIRATION LINKING THE ROYAL BALLET SCHOOL AND THE ROYAL OPERA.

By Sara Hart

Architect: Wilkinson Eyre
Architects—Jim Eyre (director in charge); Annette von Hagen (project architect); Martin Knight
Client: The Royal Ballet School
Engineers: Flint & Neill Partnership (structural); Buro Happold (environmental)
Consultants: Speirs and Major (lighting); GIG Fassadenbau GmbH (bridge subcontractor)
General contractor: Benson Limited

Span: 31 feet
Cost: \$1.42 million
Completion date: March 2003

Sources
Lighting: AcDc Lighting (LED units); Design Architectural Lighting (low-voltage downlights)

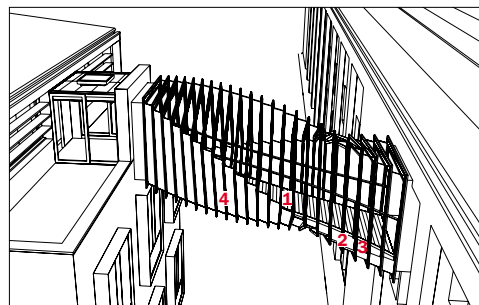
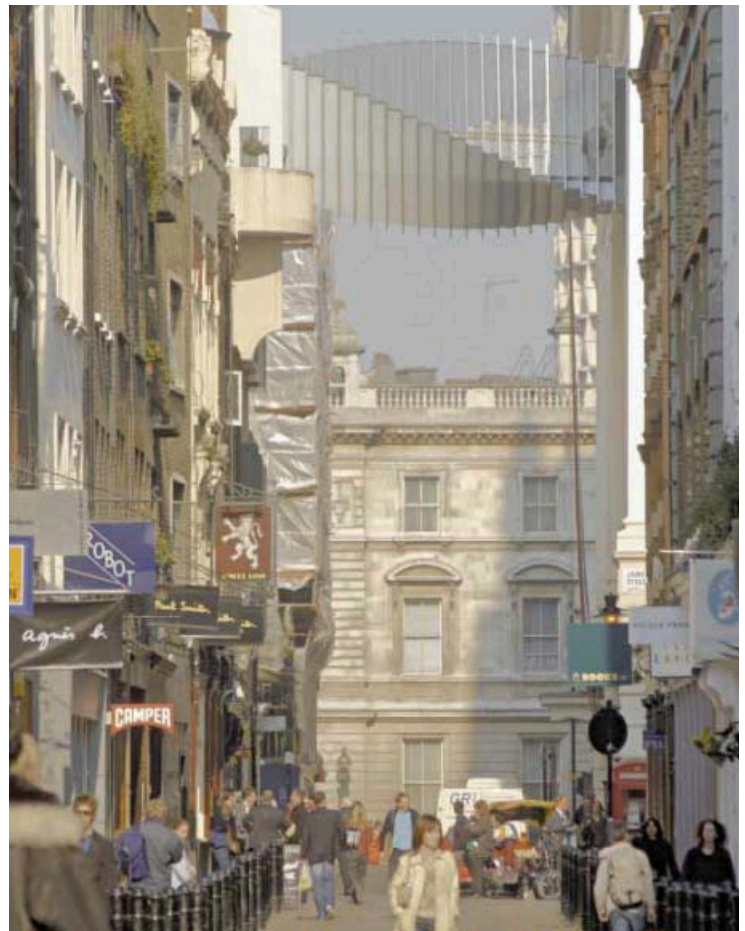
In spite of its diverse practice, London-based Wilkinson Eyre Architects has solidified its reputation internationally as a designer of spectacular bridges. Its Floral Street Bridge at Covent Garden is a fraction of the scale of its award-winning Gateshead Millennium Bridge spanning the Tyne River, but just as powerful.

Program

Because the bridge spans a mere 30 feet across an unassuming street in London's Covent Garden, one would assume that the program would call for a modest functional footbridge connecting the back sides of two buildings. But these aren't just any buildings. Floral Street separates the Royal Ballet School from the landmark Royal Opera House. Ballet students, faculty, and staff of the school needed a direct link to the stage of the opera house. The client wanted a strong architectural statement—one that would provide an integrated link between the buildings while giving Floral Street a prominent identity.

Solution

The openings between the buildings are not aligned, making a straightforward orthogonal resolution seem like a jerry-rigged collision between two architecturally distinct structures. To avoid that trap, Wilkinson Eyre conceived a deceptively simple, yet



1. Timber deck
2. Aluminum sections
3. Structural spine
4. Opaque glazing

For more information on this project, go to Projects at www.architecturalrecord.com.



Created out of aluminum, glass, and wood, the footbridge, in the form of a concertina, twists from one facade to the other, becoming more sculpture than architecture.

immediately legible design. An aluminum spine beam supports a timber deck and a series of square aluminum hoops. Between the openings, each hoop rotates 4 degrees relative to its neighbor and shifts in plan to accommodate the skewed alignment of the facade openings. The whole structure twists a quarter turn from one end to the other.

A structure as pure as this one created a challenge for the lighting designers. With no soffit in which fixtures could be mounted, the lighting team had to find other locations. The solution incorporates LEDs in an L-shaped form attached to the top corners of the hoops. As a result, the bridge glows gently in the darkness without blurring the details of the delicate spiral.

Commentary

By taking the form of a concertina and twisting it, Wilkinson Eyre blended structural and architectural geometries into a single unit. Motion appears to be frozen into an abstract, yet palpable, symbol for the ballet school. It literally marks the passage from the practice studios and classrooms to the stage, which is why it's informally known as the "Bridge of Aspiration." ■



Central Street Bridge

Worcester, Massachusetts

6

CENTERBROOK ARCHITECTS CONQUERS GRIDLOCK AND CAPTURES THE SPIRIT OF INVENTION IN A NEW RAILROAD BRIDGE.

By Nick Olsen

Architect: Centerbrook Architects and Planners—William H. Grover, FAIA, James C. Childress, principals in charge; Padraic H. Ryan, Roger U. Williams, AIA, Michelle R. Lafoe, Jonathan G. Parks, project team

Client: Worcester Redevelopment Authority and the City of Worcester, Mass.

Consultants: Maquire Group Connecticut (engineering); Warfel Schrager Architectural Lighting (lighting)

Span: 178 feet

Cost: \$4.5 million (bridge only)

Completion date: October 1999

Sources

Brick: Endicott Clay Products

Stainless steel: The Henry Group

Home to Robert Goddard, the inventor of the rocket, the city of Worcester, Massachusetts, also lays claim to breakthroughs as diverse as the Valentine's Day card and the birth control pill. When faced with a problematic railroad crossing on Central Street, its main vehicular artery, the city sought a solution that would reflect its inventive character.

Program

In recent years, new developments along Central Street, including a civic center and hospital, have brought additional congestion to this busy main corridor, which connects to Interstate 290. The prior on-grade railroad crossing created a traffic nightmare, effectively blocking access to the city with each passing train. Following a master plan by Alex Krieger of Chan Krieger & Associates, Cambridge, Massachusetts, city officials decided to lower the road, raise the tracks, and erect a railroad overpass. This was to be no ordinary work of infrastructure, however. On Krieger's recommendation, local officials enlisted Centerbrook to stretch a limited budget and make a statement about Worcester's rich past and promising future.

Solution

The formal expression of such a statement sparked contention in the community. Centerbrook architects William H. Grover and James C. Childress designed more than eighty



proposals, some appeasingly traditional in style, and each reflecting Worcester's many inventions. Ultimately, a modern expression of a historic novelty prevailed: The winning bridge design takes its inspiration from the calliope, a steam pipe organ developed in the city in the 1850s. The bridge, which spans 178 feet, features broad arches of gleaming stainless steel with radial supports accompanying the traditional safety railings. The steel matrix imitates the alignment of the calliope's pipes and

creates a graduated screen for the city that contrasts sharply with the brick-clad reinforced concrete piers and the abutments emerging from surrounding earth berms. The steel railings feature three different levels of polish to vary their reflective sheen. At night, a kaleidoscopic play of stoplights and signs against the metal heightens the effect, hinting at the energy of the city ahead. In fact, the railing structure was constructed on the flat ground of Greenville, Texas, disassembled, and shipped piece-

For more information on this project, go to Projects at www.architecturalrecord.com.

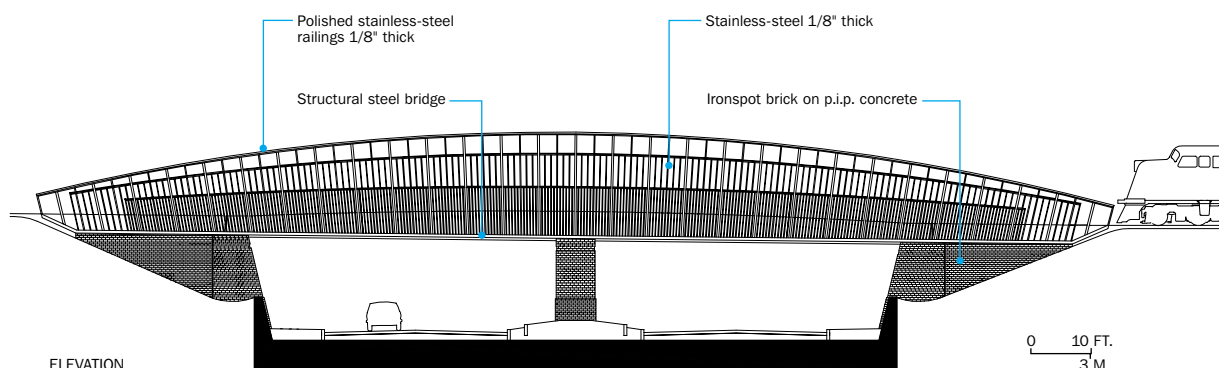
At night, traffic lights and signage bring the polished stainless steel to life (below). The new bridge eliminates a difficult on-grade crossing.



meal to Worcester—ironic for a bridge so emblematic of its setting.

Commentary

Going beyond their charge to “decorate a railroad bridge,” Grover and Childress mined Worcester’s history for a distinctly forward-looking design. Departing from the monolithic presence of most railroad overpasses, the bridge’s glittering steel web alludes to the speed of transportation and offers an appropriate gateway to a city of innovation. ■



Sail Bridge

Swansea, Wales, United Kingdom

7

WILKINSON EYRE'S SAIL BRIDGE SIGNALS TO ALL COMERS THAT THIS PORT CITY IS IN THE MIDST OF AN ENERGETIC ECONOMIC REVIVAL.

By Charles Linn, FAIA

Architect: Wilkinson Eyre
Architects—Jim Eyre, Martin Knight, Ben Addy
Client: Welsh Development Agency
Consultants: Flint & Neill
Partnership (structural engineering)
General contractor: Balfour Beatty Construction

Span: 465 feet
Cost: \$5,300,000
Completion date: June 2003

Sources
Cable-stayed, steel superstructure:
Rowecord Engineering



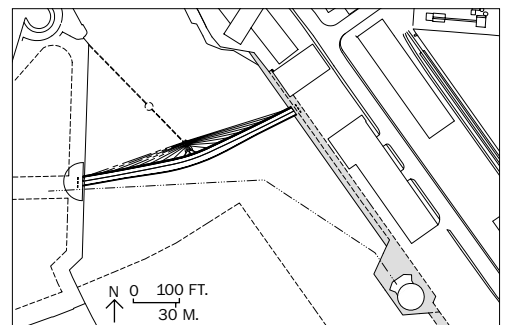
Swansea's Port Tawe industrial waterfront district is not unlike those in countless port cities throughout the world. Over the past century its shipping and heavy industries became redundant and fell into obsolescence. But this city on the Bristol Channel in southwest Wales is in some ways more fortunate than many others. The British government's Welsh Development Agency (WDA) master planned the area and invested millions of pounds in its redevelopment. It commissioned the Sail Bridge, a pedestrian link spanning the Tawe River and connecting the new Port Tawe Innovation Village with Swansea's business district, as a symbol of the area's revival.

Program

The purpose of the WDA's redevelopment project at Swansea was to attract businesses at a reasonable price. Yet considering that the area was in need of costly improvements to its infrastructure, one might think the \$5 million spent on the bridge would have been better put into sewers and power lines. But those work pretty much the same way everywhere—they don't give one city a substantial advantage over the next. That demands marketing.

A marketing plan intended to show off a redevelopment

should include a grand gesture, something to turn the heads of prospective tenants and investors and distinguish a particular place from all others. For a city like Swansea, which has a notable past, such a focal point might display some element of that tradition while still showing that progress is the rule



For more information on this project, go to Projects at www.architecturalrecord.com.



Want to tell the entire world your city is making a comeback? Build yourself a fantastic bridge in a key location, and the public will flock to your shores.



Appearing to levitate, the curved bridge deck never touches the cable-stay mast. Tuned mass dampers prevent it from vibrating.

of the day, and the future is bright. Now, what if that symbol could itself be a crucial piece of infrastructure?

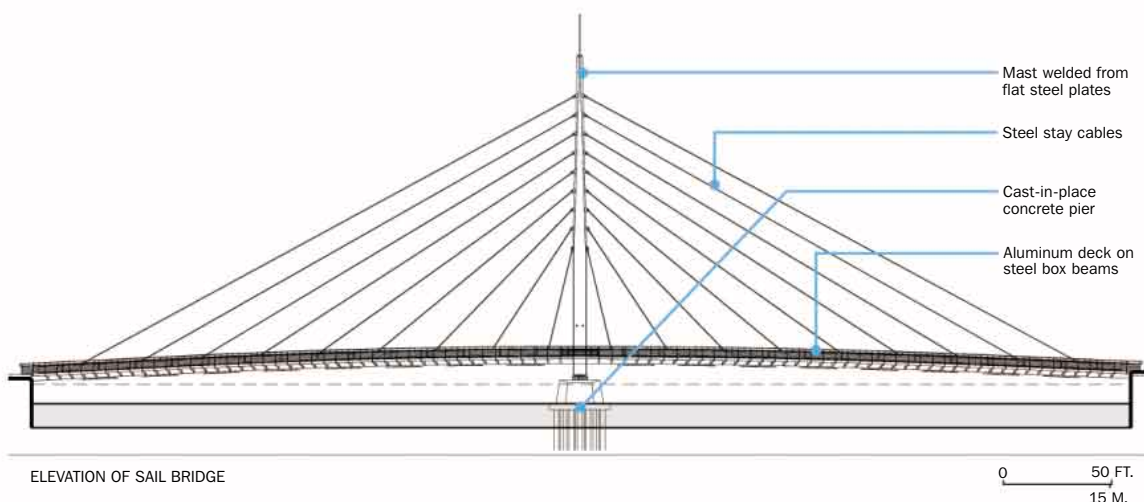
Solution

In Swansea, the grand gesture is the Sail Bridge. Wilkinson Eyre, a London-based architecture firm, was selected for the project based on the strength of its preliminary design, a cable-stayed bridge that departs from conventional designs in several ways. Instead of creating a straight point-to-point span across the river, the deck curves gently around the mast (see plan, page 264). The 131-foot-tall tower leans toward the water at a significant angle, counterbalancing the deck in much the same way that a sailboat in the wind is kept from overturning by the weight in its keel. The bridge's sculptural shape, along with its semiradially fanned stay cables, gives it its distinctive maritime character.

The aluminum-topped deck sections are slender steel box girders designed to resist the torsional forces that develop as a result of the placement of the cables on only one side of the deck. Tuned mass dampers keep the deck from vibrating under repetitive impact loads, such as those that might occur when joggers cross the bridge.

Commentary

Architects often wish for an algorithm that can show clients that the return on investment for an exceptional, but perhaps costly, structure will be much greater than something plain that can perform the job equally well. Unfortunately, though the power of certain objects to attract people is very real, at the moment their return on investment can't be quantified. Clients and the public are extremely lucky when exceptional architects can persuade them that even if a job is only a footbridge, it will be there a long time—and that the grand gesture is worth the money. ■





Houghton Park Pedestrian Skyway Corning, New York

8

HASCUP/LORENZINI REVIVES THE SPIRIT OF THE BAUHAUS WITH AN ENCLOSED GLASS BRIDGE AND VISITORS' PAVILION FOR THE CORNING COMPANY.

By Suzanne Stephens

Architect: Hascup/Lorenzini

Associates—George Hascup, principal in charge of design; David Lorenzini, principal and project architect; Robert Manchester, Edsel Ramirez, designers; Jeremiah Fairbank, CADD designer

Client: Corning Incorporated

Consultants: Delta Engineers (*m/e/p for skyway*); Thomas Associates (*m/e/p for visitor's pavilion*); SureSpan Group (*structural for bridge truss*); Greg Dende (*structural for visitors' pavilion*); Amy Nettleton (*landscape design for skyway*); Trowbridge & Wolf (*landscape architects for parking pavilion*)

Span: 200 feet

Cost: \$3.5 million (*skyway*); \$2.2 million (*visitors' pavilion*)

Completion date: May 2003

Sources

Steel bridge truss: SureSpan Group

Glass and metal curtain wall:

Clayton B. Obersheimer

Metal roofing and stainless-steel perforated ceiling panels: AccuFab



One doesn't usually expect a covered bridge to be made of glass. Unless it belongs to Corning Incorporated: Glass has been integral to the architectural identity of this company, located in upstate New York, since Harrison & Abramovitz designed the Corning Glass Center and Administrative Building in 1950–53. Then Corning bolstered the image with a glass museum by Gunnar Birkerts (1976), plus additional expansions by Smith-Miller Hawkinson (1992–2001), and even a headquarters complex across the Chemung River by Kevin Roche John Dinkeloo and Associates

(1993 and 1999). As the latest installment, Hascup/Lorenzini Associates (now George Hascup Associates and David Lorenzini Associates) designed a pedestrian bridge and a visitors' pavilion as part of the 5-acre Houghton Park, adjacent to the original complex.

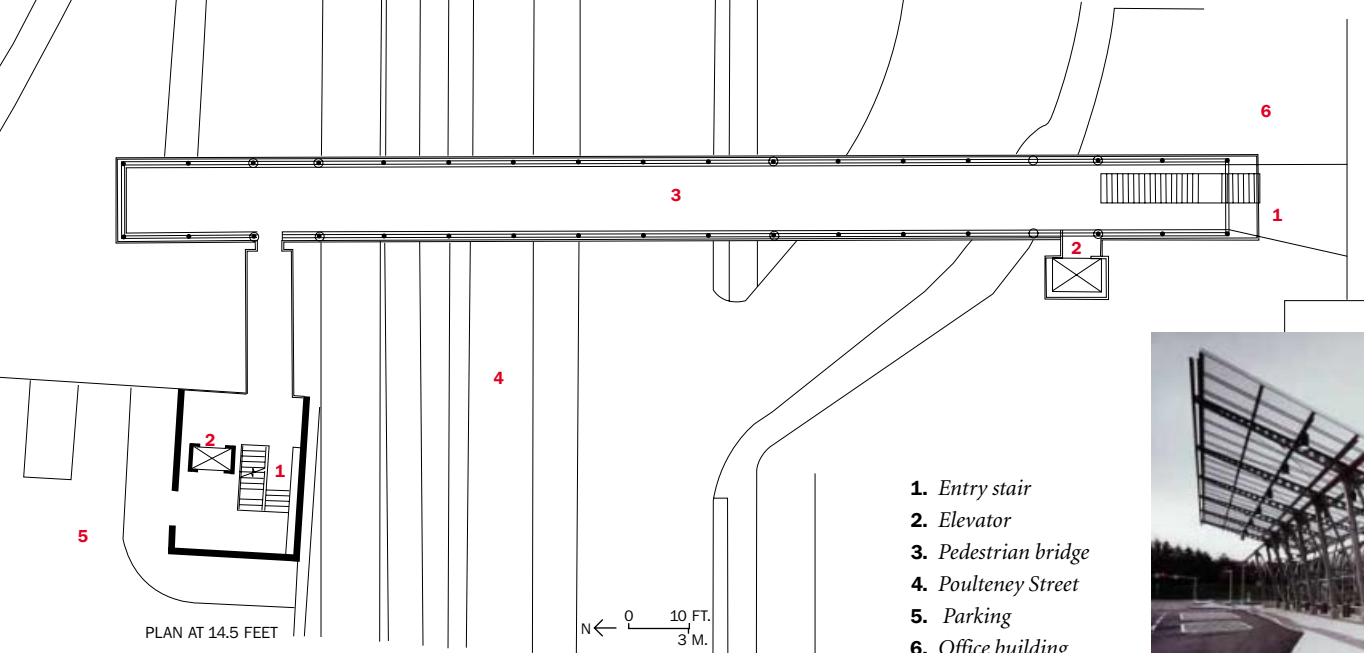
Ironically, however, the glass used in the bridge is not made by Corning. The company once known as Corning Glass Works no longer produces architectural glass, having directed its interests to high-tech areas such as telecommunications components, ophthalmic products, and high-performance glass for tele-

vision and information display. Only Steuben, renowned for its hand-blown-glass luxury objects, still has a factory at this location.

Program

Because of the influx of museum visitors in addition to Corning personnel, the company needed a 200-foot-long bridge to take pedestrians from a 700-car garage and a parking lot for a 1,000 cars across the main boulevard, Poultney Street, into the Corning campus. Cold, icy weather half the year called for an enclosed bridge. In addition, the company wanted to

For more information on this project, go to Projects at www.architecturalrecord.com.



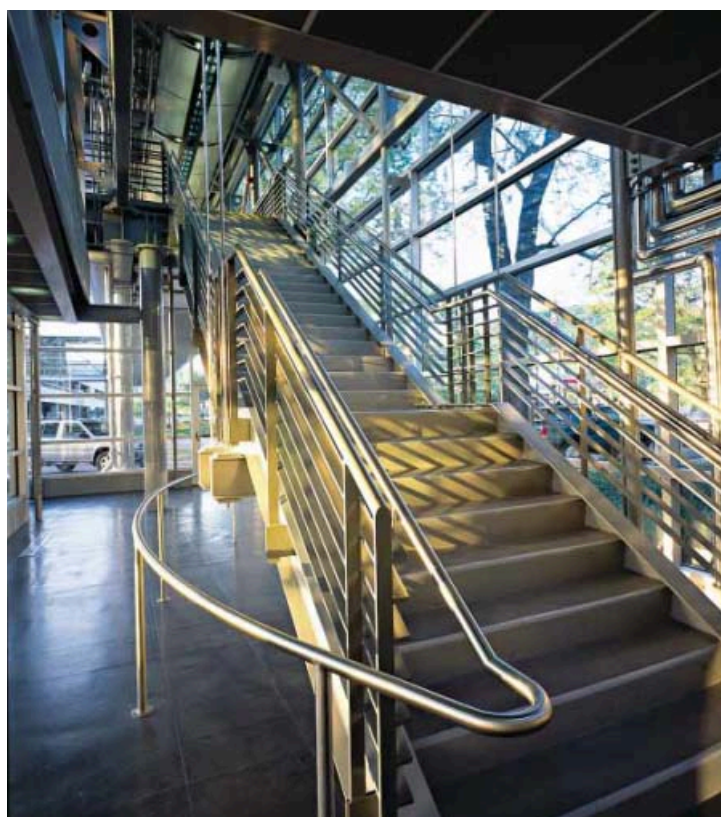
1. Entry stair
2. Elevator
3. Pedestrian bridge
4. Poultney Street
5. Parking
6. Office building



The glass canopy of the visitors' pavilion (above) shelters a triangular glass structure attached to a round concrete bathroom core. The skyway bridge (opposite) cantilevers at the north end (below), next to the parking garage.



The ceiling (above), on which slightly bowed, perforated-steel screens and a spine of crystal louvers are mounted, adds to the luminous effect of the elevated bridge. The long stair (right), with well-proportioned pipe rails and flat balustrade rails, creates a grand entrance at the south end, where the bridge connects to Corning's office buildings.



have a 4,500-square-foot visitors' pavilion to provide orientation, service facilities, and a shuttle stop for the Roche Dinkeloo-designed headquarters. It turned to George Hascup, a professor of architecture at Cornell University, to provide the clean, modern lines displayed in his firm's Lake Source Cooling Pump Facility for the university (2002).

Solution

The 3,600-square-foot elongated structure is composed of an 11-foot-square Vierendeel truss, the largest size that could accommodate pedestrians yet still be trucked from the factory in West Vancouver, Canada. Horizontal mullions of the curtain wall further reinforce the long linear thrust of the bridge, which is cantilevered in true Bauhaus fashion at one end.

The interior of the 200-foot-long walkway is made more dramatic through the installation of shimmering, perforated-steel screens on the ceiling. A spine of crystal louvers running down the middle refracts the light and emphasizes the sense of movement. "When I apprenticed with Kevin Roche and John Dinkeloo," Hascup says, "I worked on the TWA Terminal renovations at Kennedy Airport. Eero Saarinen's beautifully curved soffit in the tubular link at TWA fostered the sense of dynamism that I hoped to recreate here."

Even though the bridge is cooled and heated, the ceiling screens reduce heat gain, as do the side panels of pale green glass with a low-e coefficient. "The light green relates the bridge to other Corning buildings," Hascup says.

Commentary

While this bridge is not the awe-inspiring engineering feat of, say, long-span bridges held together with threads of steel, the pristine and elegant manipulation of glass concealing the Vierendeel truss for the bridge is impressive. The architectural contribution is particularly notable for its balance of proportions in such elements as the truss chords, gusset plates, and mullions. ■

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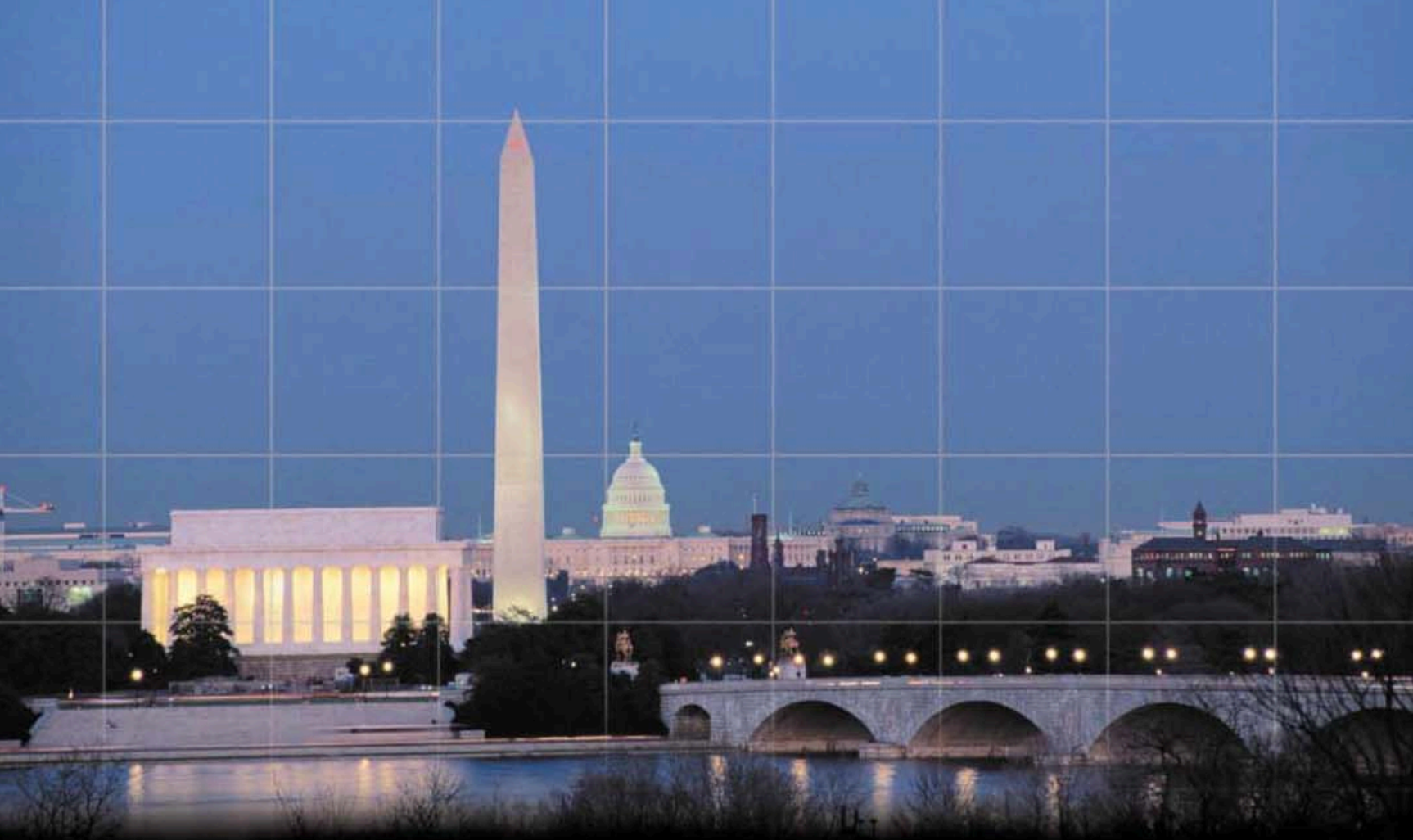
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Architectural Technology

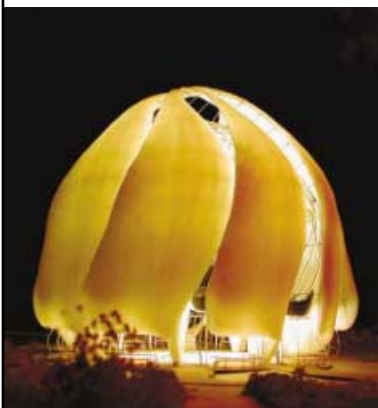
Bold results from designers who dare to collaborate, with technology as a common language

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Concrete canopies shelter passengers at a light-rail station (289).

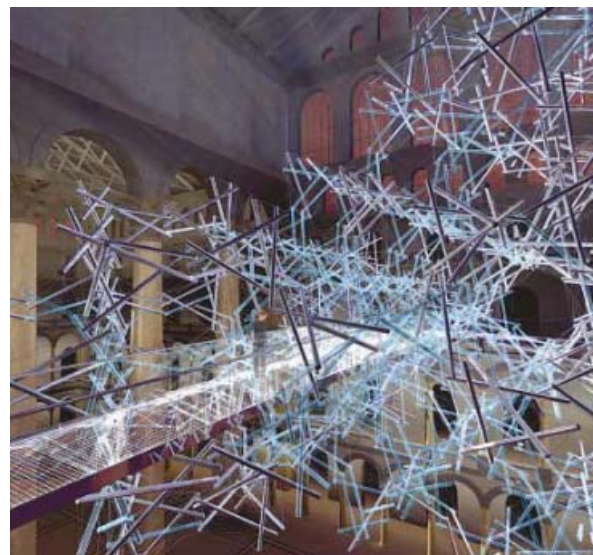


A nine-sided structure, draped in alabaster, takes shape in Chile (296).

What happens when architects and engineers team up on a design? In the stereotypical scenario, tensions run high in opposing camps. Architects decry how engineers whittle away at design intent and aesthetic quality for the sake of efficiency and budget; engineers, largely trained to analyze the efficacy of a given structure with little regard for its program or overall composition, agitate impatiently as architects ponder options for siting, form, material. Fortunately, this shopworn script has undergone a rewrite by today's best practitioners, who have jettisoned finger-pointing and assumptions about the role of each profession in favor of setting common goals from the outset of a project and staying true to them throughout its execution. Often, technology serves as the starting ground, becoming the basis for experimentation and execution.

This month we highlight the fruits of this collaboration. Bridge design, for instance, has evolved enormously with 3D CAD and advanced structural analysis for nonorthogonal forms. The pedestrian bridges shown in the Building Science feature demonstrate that, far from being simple pathways connecting disparate points, bridges can now define the void space between destinations in unique, even exuberant, ways. The feature on mass transit catalogs options for travel by means other than the beloved-yet-beleaguered passenger vehicle, and showcases transit shelters and stations whose bold forms could be emblems of an emerging trend, one that could be termed "transit density" (even freeway-centric Houston recently opened a light-rail surface transit system). Finally, in Zoom In, we examine a temple whose organic design (an exotic mushroom? a graceful sea creature?) evolved from rigorous computer modeling and analysis by an architect-engineer team in Toronto, with guidance from some technophiles in Los Angeles (we'll let you read who they are).

With projects that imply movement and motion, these designers are shaking up the status quo. *Deborah Snoonian, P.E.*



(280)

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Architects Discover Bridge Design Can Be the Perfect Union of Art and Science

ARCHITECTS AND ENGINEERS ARE TRUE COLLABORATORS IN THIS SUBSET OF ARCHITECTURE

By Sara Hart

Most bridges are seen as utilitarian instruments built to traverse an irregular terrain in a regular way. So logical is this process that most bridges can be diagrammed as a straight line announcing the shortest distance between two points. Bridges are all structure—form following function in the most literal way. And yet, despite the obvious connections to engineering, there are numerous examples that suggest bridge design is a minor subset within architectural building types, as well. When architect and engineer enter into a true collaboration, where there is design parity, the results are often stunning, as evidenced by this issue's collection of outstanding pedestrian bridges (page 247). Two of them are examined more closely here in order to demonstrate the connection between art and science.

Arrested movement

"An enduring quality of many bridges is their sense of arrested movement," writes Jim Eyre, partner at London-based Wilkinson Eyre Architects, a firm renowned for its elegant bridges. "What can imply more movement than the graduated curves of an arch or a suspension catenary? The form of the structure is obviously important in this regard, but the sense that all of the various elements are juxtaposed in a dynamic counterpoise—where balance is only just maintained, some-



The Floral Street Bridge in Covent Garden is a "twisted concertina" joining the Royal Ballet School with the Royal Opera House.

BUILDING SCIENCE

CONTINUING EDUCATION

Use the following learning objectives to focus your study while reading this month's ARCHITECTURAL RECORD/AIA Continuing Education article. To receive credit, turn to page 286 and follow the instructions. Other opportunities to receive Continuing Education credits in this issue include the following sponsored sections: "Window Installation," sponsored by JELD-WEN, page 311; "Italian Tile," sponsored by the Italian Trade Commission, page 317; and "New Tools for Specifying Architecturally Exposed Structural Steel," sponsored by the American Institute of Steel Construction (AISC), page 323.

LEARNING OBJECTIVES

After reading this article, you should be able to:

1. Discuss unusual artistic design of recent bridge projects.
2. Explain the concept of arrested movement.
3. Describe the construction of the box beam used in these bridges.

where close to the limits—is crucial, too."

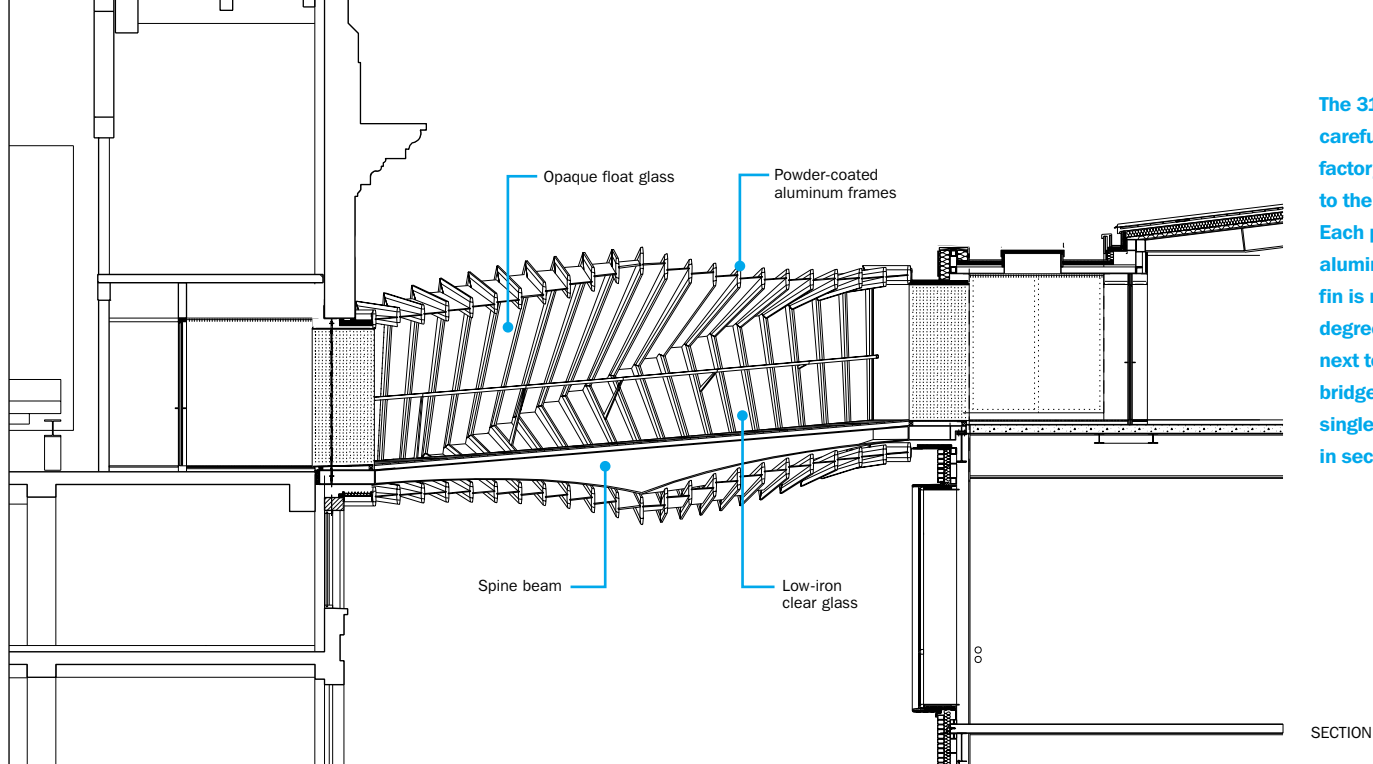
Wilkinson Eyre arrested movement artfully with its Floral Street Bridge in London's Covent Garden district (page 260). The bridge connects the Royal Ballet School with the Royal Opera House. Ballet students training to attain a certain dynamic counterpoise of their own will use this walkway four floors above the street to get from the practice studio in the school to center stage at the opera house.

The bridge spans 31 feet, which is not particularly formidable as spans go. However, engineering gets more complicated when the architecture deviates from the orthogonal, as it does dramatically in this case, prompting the figurative description of the structure as a "twisted concertina."

The single structural component that governs all other elements in its construction is the box beam, also called the spine, which runs the distance between the two buildings and supports the deck surface, the secondary structure, and all other loads. Generally referred to as a "simple" beam, the eccentricities of the bridge enclosure required complex 3D modeling to solve the issue of both the slope (about 2 feet) and the rotation of the frames (about 13 feet over the span). In the final solution, the engineers ended up with a beam that is anything but simple. It is defined by thin rectangles at each end, which morph into an equilateral triangle at the center (see section, page 280).

The beam is an aluminum box made up of flat plates welded

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The 31-foot bridge was carefully crafted in a factory and delivered to the site in one piece. Each powder-coated aluminum and wood fin is rotated about 4 degrees from the one next to it. The entire bridge is supported by a single box beam (shown in section at left).

The bridge is lit from within (far right) by LEDs mounted on brackets in the upper corners of the portals.



onto extruded sections of varying geometry, which are bolted together to form the complete beam. Before settling on aluminum, which is lightweight and durable, the design team considered other materials. Ian Firth, partner at the London-based Flint & Neill Partnership, the engineers for the project, explains, “The materials had to be lightweight, because there was a limit to the loads that could bear on either building. We considered stainless steel, which could have been thinner, because of its higher strength and stiffness, and, therefore, as light as aluminum.” In the end, they rejected stainless steel along with glass-fiber-reinforced polymer, because the cost of both was considerably more than the cost of aluminum.

The beam, fabricated in Austria, was shipped to a factory in West London, where it was clad with powder-coated aluminum and timber frames, also called portals or fins, and then glazed with either opaque float glass or low-iron clear glass. The square frames are attached to the aluminum beam by pairs of simple brackets on each side of the beam. These brackets secure the bottom corners of the frame and have slots to

allow thermal expansion and contraction, as well as ventilation. The glass panels are fixed between the frames using structural silicone.

Maintenance issues were a large concern, especially considering how integrated all the components are. Because the spine supports all the elements, none of the frames is dependent on the one adjacent for sup-

“MATERIALS HAD TO BE LIGHTWEIGHT, BECAUSE THERE WAS A LIMIT TO THE LOADS THAT COULD BEAR ON EITHER BUILDING.”

port or stiffness. This means that individual frames or their glass sections can be replaced if necessary without compromising the overall structure. Early on in the design process, the team realized that achieving this operational objective, as well as ensuring stability within the frames, required that the beam be engineered to absorb live-load deflections in order to minimize movement in the frames.

Factory prefabrication had two advantages. First of all, the



The box beam was fabricated in Austria, then shipped to a factory in West London, where the aluminum and wood fins, or portals, were attached (left and below), then glazed.





details and the connections have the craftsmanship of fine cabinetry. Secondly, the assembled bridge could be delivered to the site in one piece and installed in 2 hours, limiting disruption of a busy site in central London.

Arrested movement continues to be a theme for Wilkinson Eyre. In a project currently in development, the architects are designing

A STRUCTURE HAS TENSEGRITY IF ITS ELEMENTS ARE BALANCED IN TENSION AND COMPRESSION AND RESISTANT TO TORQUE.

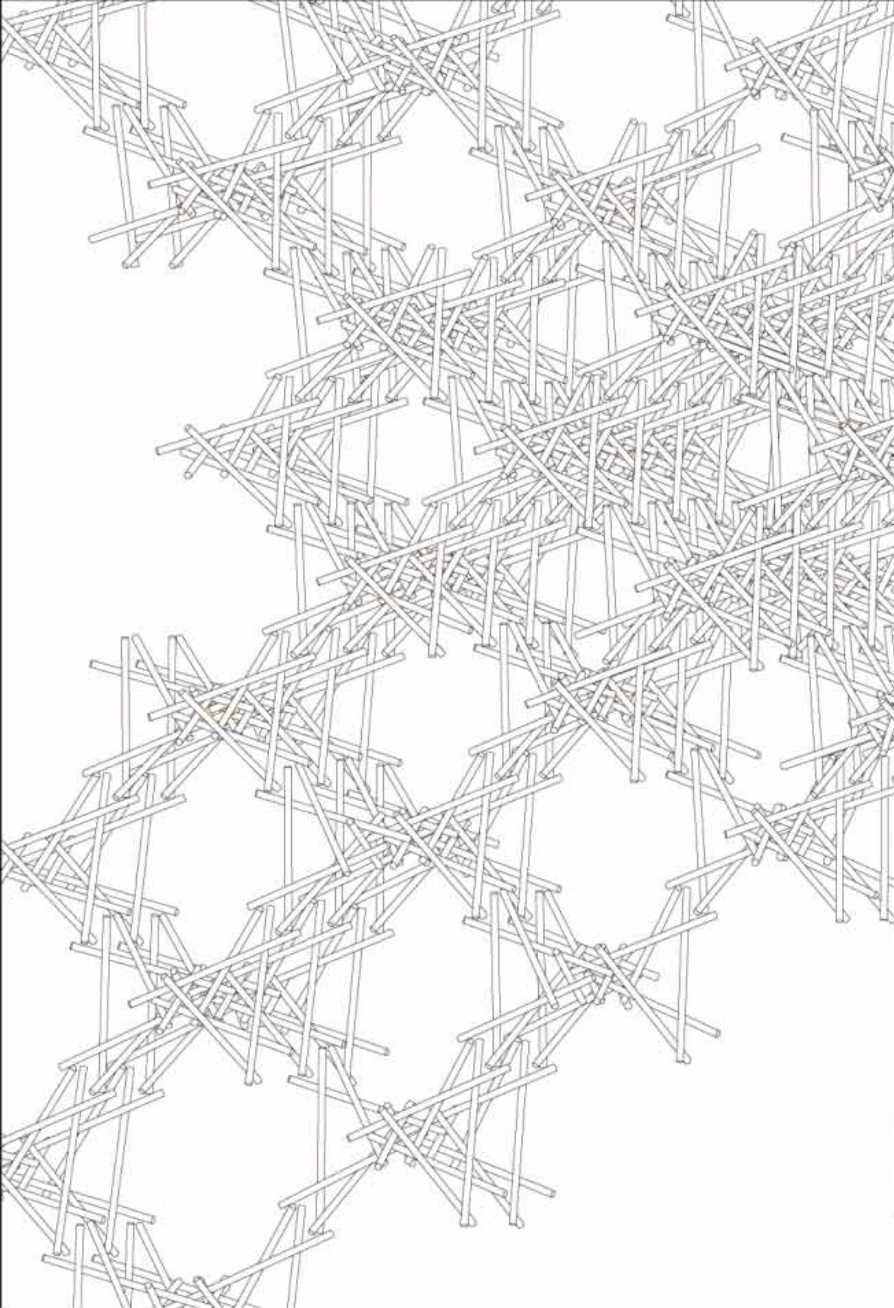
a bridge to span 116 feet across the giant hall of the National Building Museum in Washington, D.C. The Advanced Geometry unit at Arup's London office is engineering the bridge as a "tensegrity" structure. Buckminster Fuller invented the term *tensegrity* to describe the structural principle behind his geodesic domes; it's the contraction of *tensional integrity*. A structure has tensegrity if its elements are balanced in tension and compression and resistant to torque. Tensegrity structures reappear from time to time, either in commercial applications [RECORD,

May 2002, page 267] or in experimental ones, such as the project at the museum. At this stage, the idea is emerging as a matrix of cables and struts equipped with stress gauges, which will record live loads and send the signals to a computer, which will turn them into a pedestrian-generated light show.

Bridge over neglected waters

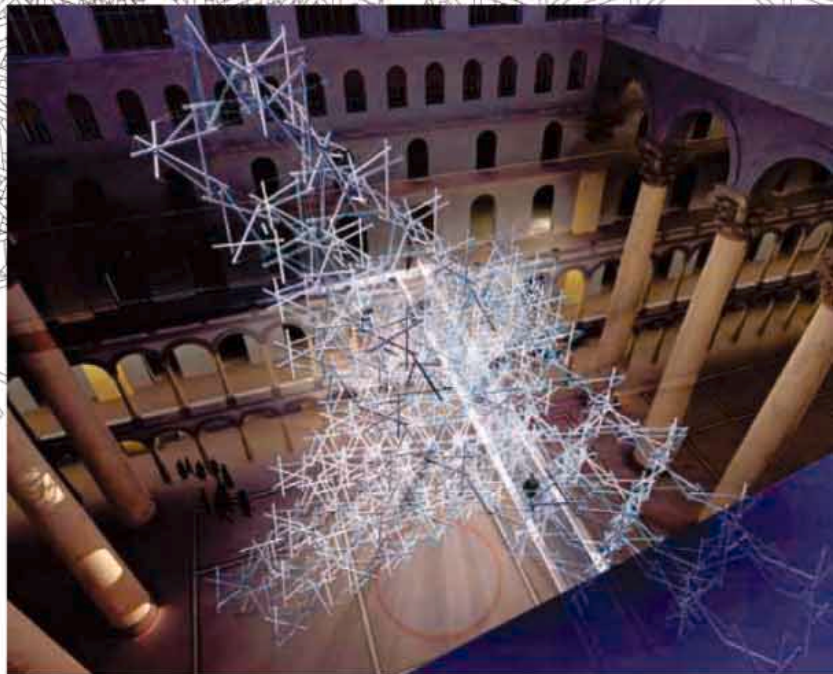
The Webb Bridge in the Melbourne Docklands (page 248) has a lot in common with the Floral Street Bridge a half a world away—complex geometry, off-site fabrication, the same Austrian bridge subcontractor, and a continuous box-beam structural system. It also required a serious collaboration between the architect, Denton Corker Marshall (DCM), and the engineer, Arup. Furthermore, the bridge was to incorporate fragments of an old railway bridge, abandoned in the River Yarra and no longer attached to the shore.

The Melbourne team also included artist Robert Owen, whose idea for the bridge was inspired by an eel-fishing trap, a reference to the type used by Aboriginal people who lived at the site 200 years ago. As with Floral Street, the design process began with 3D computer modeling of the



Wilkinson Eyre and Arup are developing a pedestrian bridge to span the 116 feet across the Great Hall at the National Building Museum in Washington, D.C. Still in the conceptual

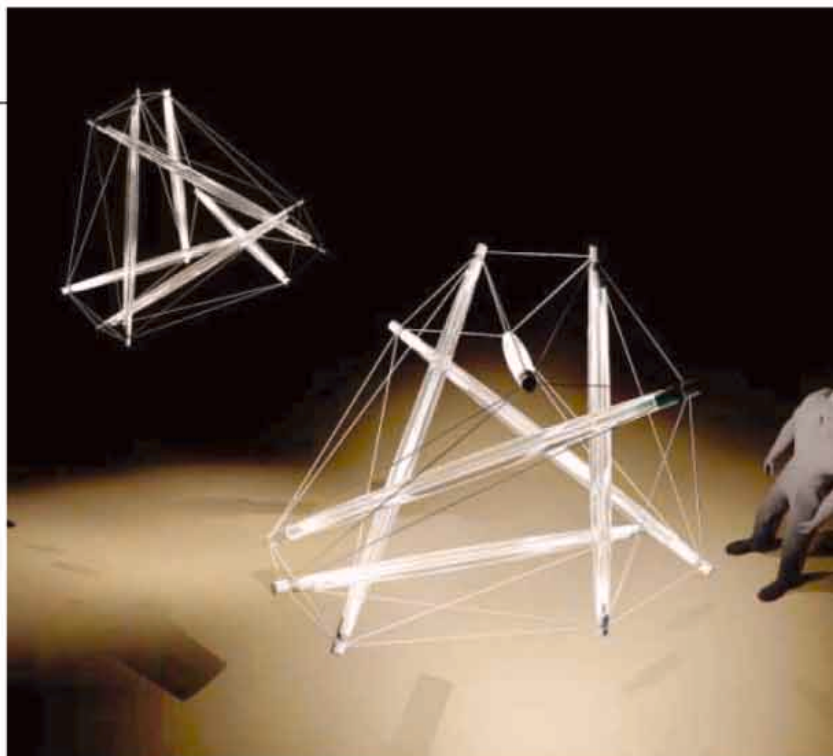
stage, it will be a tensegrity structure, the physical embodiment of Buckminster Fuller's theory of continuous tension and discontinuous compression, which results in tensional integrity.

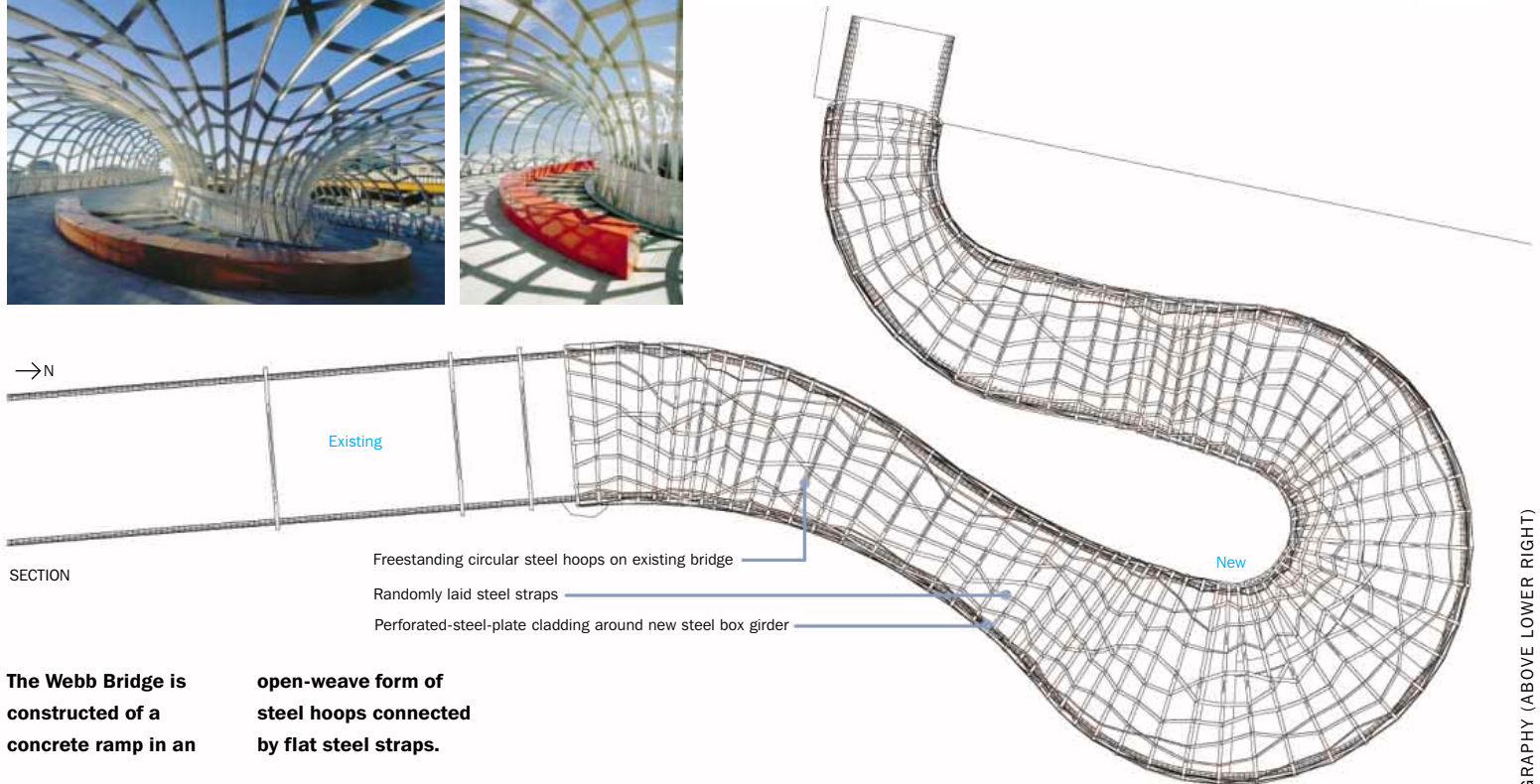
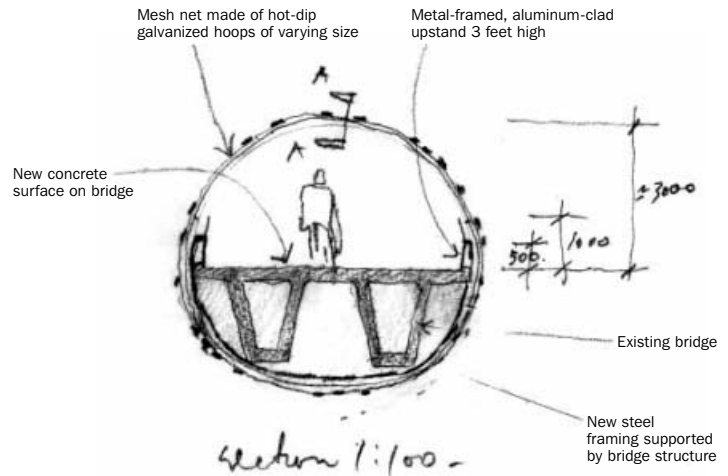
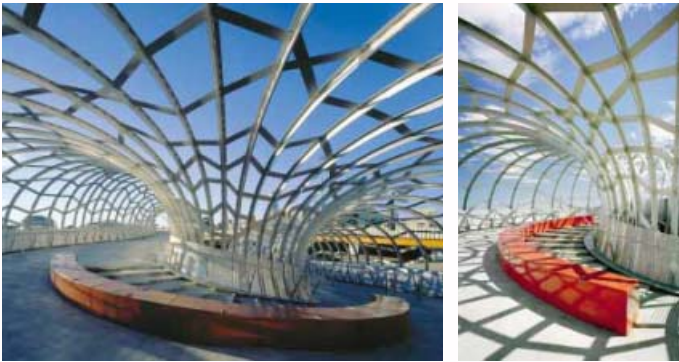


basic concept—in this case, the artist's sketch.

The new bridge is constructed of a concrete ramp sitting atop a steel box beam, which, in turn, rests over the existing railway bridge remains. This main structure is then enclosed by an elaborate latticework of curved, flat, laser-cut strips of steel. DCM developed the geometry using parametric modeling to determine the size and spacing of the straps and hoops that made up the open-weave design. Parametric base models are defined by simple physical parameters; the designer can change the parameters and the model updates itself automatically. This allowed the architects to explore multiple iterations rapidly until the desired effect was achieved. The data was simultaneously entered into a CAD model, which was used to locate the hoops along the ramp's path. This tool immediately confirmed clearances both internally over the ramp and externally over the high-tide water level.

The geometry of the bridge, a hairpin ramp of varying width twisting and turning in three-dimensions, enclosed with steel hoops and curved cladding of varying radii and spacings, meant that almost every component was unique. The collaboration soon expanded to include a shop-drawing specialist and a fabricator, as it became obvious that their





The Webb Bridge is constructed of a concrete ramp in an

open-weave form of steel hoops connected by flat steel straps.

expertise would be needed from the beginning.

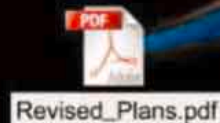
All team members reviewed and developed the documents through each stage, to ensure the scheme stayed within budget without diluting the design objectives. In this way, the cost of what Australians call “design-development risk” was eliminated from the process. At the same time, the team made sure the steel supplier understood the design’s complexity well enough to keep prices within an acceptable range.

The 3D CAD design model was developed by DCM and passed to the fabricator and his shop-drawing specialist, Precision Design. With the close involvement of Peter Bowtell, principal in Arup’s Melbourne office, the structural components were developed in three dimensions. These consisted of the large steel box girders and primary substructure, and later the hoops, straps, and cladding supports. At all times, the components were reviewed against the architect’s CAD model to ensure the design envelope was not compromised and the design integrity was maintained. Individual shop drawings were created in 3D CAD and used to drive CAD-based plasma cutters.

As with Floral Street, prefabrication was appealing. The steel



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The Webb Bridge was towed on a barge to the site on the River Yarra.

fabricator suggested towing the completely assembled bridge into position over water. This saved significant money on the anticipated floating-crane costs and site-assembly time. As the project architect recalls, “It was this joint sharing of ideas and approaches that meant that everyone ‘won’ in the process.”

Rather than ship the assembled bridge across Port Philip Bay from Geelong to Melbourne (47 miles), the design team, at the suggestion of the fabricator, decided to assemble the components at an empty quay within the Melbourne Docklands. The box girders, outrigger substructure, ramp deck, hoops, and cladding supports were assembled as a giant

three-dimensional jigsaw puzzle on three connected barges. Much of the straps and all of the cladding sheets were left off at this stage.

Very early one morning during a high spring tide, the barges were slowly towed to the site by a tugboat. Because the bridge weighed hundreds of tons, coordination and precision became imperative. The barges were maneuvered into place, and as the tide dropped, the bridge lowered into position and rested on the end of the existing bridge, pier, and quayside. The window of opportunity was very small, with only a few hours to complete the process. If they hadn’t

secured the bridge in place that day or the next, the tides would be too low for the next several weeks. The extensive lighting facilities, steel cladding panels, handrails, concrete deck, and the remainder of the straps were subsequently installed in a few days.

Bridge design offers the architect a course in craftsmanship. As shown here, detailing bridges involves risk. Expectations of accuracy are higher than in many building types, and as a result, commonly accepted tolerances shrink out of view. Technological and computational advances notwithstanding, bridges offer architects the experience of raw discipline. ■



AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

INSTRUCTIONS

- ◆ Read the article “Architects Discover Bridge Design Can Be the Perfect Union of Art and Science” using the learning objectives provided.
- ◆ Complete the questions below, then fill in your answers (page 384).
- ◆ Fill out and submit the AIA/CES education reporting form (page 384) or download the form at www.architecturalrecord.com to receive one AIA learning unit.

QUESTIONS

1. Bridges are usually described in all of the following ways except which?
 - a. function following form
 - b. a straight line between two points
 - c. a way to traverse an irregular terrain
 - d. form following function
2. Which is the best description of Wilkinson Eyre’s arrested movement?
 - a. the graduated curves of an arch
 - b. balance that is only just maintained
 - c. ballet students training to attain counterpoise
 - d. a twisted concertina
3. The deciding factor in selecting aluminum over stainless steel and glass-fiber-reinforced polymer for the Floral Street Bridge box beam was which?
 - a. light weight
 - b. high strength
 - c. thinness
 - d. low cost
4. The aluminum beam was designed to absorb live-load deflections for which reasons?
 - a. for easy replacement of the glass sections
 - b. to minimize movements in the frames
 - c. to keep adjacent frames stiff
 - d. to keep the glass sections from breaking
5. The advantages of prefabrication of the Floral Street Bridge are all of the following except which?
 - a. high craftsmanship of the connections and details
 - b. delivery to the site in one piece
 - c. less disruption if a busy site
 - d. avoid taxation by shipping from another country
6. Buckminster Fuller’s term “tensegrity” is described as which?
 - a. a combination of tension and integrity
 - b. elements balanced in tension and compression
 - c. resistance to torque and compression
 - d. elements balanced in tension and compression and resistant to torque
7. Which of these elements is true for the Webb Bridge, but not for the Floral Street Bridge?
 - a. it began with 3D computer modeling
 - b. it was prefabricated in Austria
 - c. it incorporates fragments of an old abandoned bridge
 - d. they had to wait several weeks to secure the bridge into place
8. What tool allowed the architect of the Webb Bridge to explore multiple iterations rapidly?
 - a. 3D CAD modeling
 - b. parametric modeling
 - c. laser cutting
 - d. CAD-based plasma cutters
9. The “design-development risk” factor was eliminated from the Webb Bridge by what means?
 - a. a shop drawing specialist and a fabricator were added to the design team
 - b. the team made sure the steel supplier understood the design’s complexity
 - c. all the team members reviewed and developed the documents through each stage
 - d. shop drawings were created in 3D CAD
10. After the Webb Bridge was towed to the site, which of the following happened?
 - a. it was raised into place as the tide came in
 - b. it was lowered into place as the tide went out
 - c. the bridge was positioned onto a new bridge pier
 - d. they had to wait several weeks to secure the bridge into place



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Mass Transportation to Get Sleek and Daring

ARCHITECTS ARE BEING CHALLENGED TO PRODUCE TRANSIT SHELTERS AND STATIONS THAT ARE AS INNOVATIVE AS THE NEW AND IMPROVED SYSTEMS OF MOVING PEOPLE AROUND THE COUNTRY

By Barbara Knecht

Strangling traffic notwithstanding, cars are still the preferred mode of transportation, especially in the U.S. And why not? Roadways are, for the most part, smooth and ubiquitous. Internet, telephone, and movies are available at the touch of a button from the comfort of your zone-climate-controlled seat. Even for many commuters who take public transit from the suburbs into the city, an automobile is required to deliver them to the bus or rail station. Americans, among citizens of the car-dependent nations, are particularly wedded to the convenience of driving, as evidenced by U.S. Department of Transportation statistics, which state that 89 percent of

commuters drive to work alone.

Everyone is aware of the downside to this convenience. Besides the rising cost of gasoline, traffic congestion is a huge drain on both productivity and energy conservation. The average urban rush-hour driver spends about 62 hours a year stuck in traffic, which translates to 5.7 billion gallons of wasted fuel and a cost to the economy of \$70 billion dollars annually.

And yet, innovative technology is emerging that promises to make surface transport on roadways and railways more energy-efficient, reliable, and comfortable—from smoother rides on faster trains to sleeker buses with smart systems to keep them running on time, attractive alternatives to automotive transportation. The architecture of shelters and stations, which supports rail and road transit, is just starting to feed off

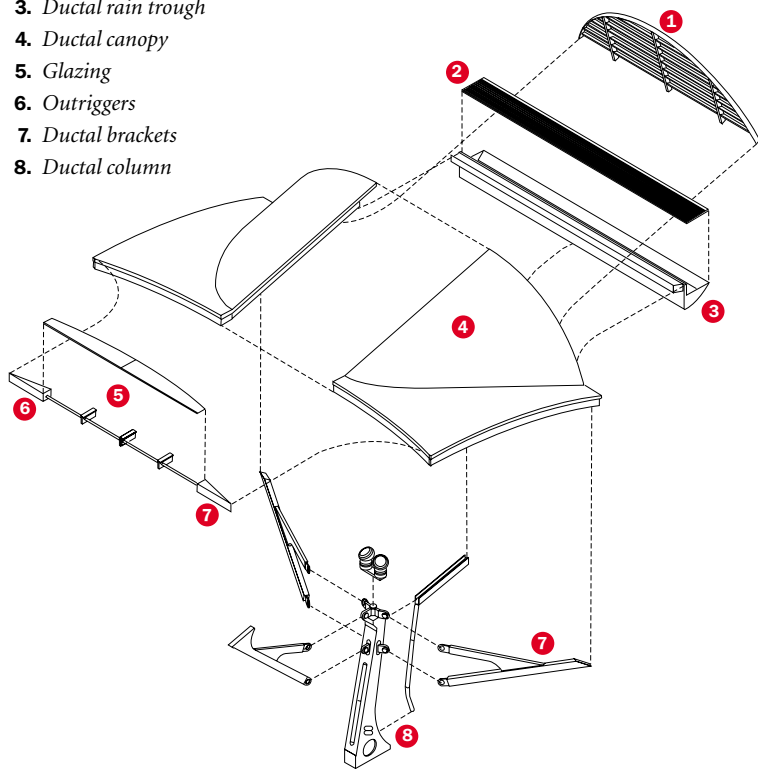
Frequent ARCHITECTURAL RECORD contributor Barbara Knecht is an architect and writer based in New York and Boston.



RENDERING: COURTESY SAMYN AND PARTNERS

Belgian architects Samyn and Partners used a combination of fiberglass and steel fabrics to create canopies for the elevated Erasme Metro station in Brussels, which opened in September 2003.

1. Louvers and glazing
2. Grate
3. Ductal rain trough
4. Ductal canopy
5. Glazing
6. Outriggers
7. Ductal brackets
8. Ductal column



CANOPY MODULE



The Calgary-based CPV Group designed a bold station for an expanded light-rail system in the Shawnessy suburb of Calgary. A series of concrete-shell canopies provide platform coverage. Each canopy section is naturally lit through the louvered clerestories and enhanced with indirect lighting. The modular forms respond to the modest scale and rhythm of the nearby residential neighborhoods.





The CPV Group chose a palette of highly durable and maintenance-free materials, including stainless and galvanized metals.

the high-tech momentum that seems to be driving the current surge in advanced applications.

Riding (above) the rails

Light- and heavy-rail transit remains tremendously effective for frequent service in heavily traveled corridors. Intercity high-speed links

have been contemplated in states as far-flung as California, Nevada, Florida, and Ohio, and are heavily used in Europe, China, and Japan. Denver and Dallas, Sacramento and St. Louis, among others, have opened successful light-rail surface systems within the past 10 years. Houston opened one at the beginning of this year. San Juan, Puerto Rico, will open a heavy-rail elevated and underground system this year, and upgrading and expansion continue on existing systems in New York, Chicago, and Boston.

However, current innovations in rail technology are focused on speed. For instance, magnetic levitation, or Maglev, is a system in which trains conquer friction's drag with electromagnetic propulsion. The frequency, intensity, and direction of the electric current controls the train's movement. One type of Maglev system, developed in Germany, is already in use in Shanghai, China, and another version is in development in Japan. With a top speed of 300 miles per hour, these trains are terrific for travel between neighboring cities, especially as an alternative to short-distance air travel.

The three components of the system include magnetic coils, which line a guideway (comparable to a traditional track); guiding magnets on the undercarriage of the train; and an electric power source. The magnetic coils along the guideway repel the train magnets and levitate

the train .39 to 3.93 inches above the guideway. Electric power supplied to the coils alternates constantly, changing the polarity of the magnets, which pulls the front of the train and pushes it from the back along the guideway.

The route between Pudong Airport and Shanghai opened for commercial service in December 2003 and is the fastest railway system in commercial operation in the world. Designed by Berlin-based Transrapid International (www.transrapid.de), the train levitates $\frac{1}{2}$ inch above its guideway, and at speeds typically reaching 267 mph, it makes the 19-mile trip in 8 minutes. Unlike a conventional steel-wheeled train, a Maglev train doesn't use fossil fuels. A Japanese system in development is designed to use super-cooled, super-conducting electromagnets, which will save more energy than even the German system.

New and expanding rail systems are offering architects an opportunity to experiment with new materials in the design of stations and shelters. In Calgary, Canada, CPV Group architects designed a station with thin-shell concrete canopies. Enzo Vicenzino, CPV principal, notes, "The community wanted a design that would announce the entrance to its neighborhood and be distinguishable from the more traditional LRT stations. I was certain that the canopies needed to be a thin-shell concrete, and the local supplier recommended a newly developed abrasion-resistant, high-performance concrete material called Ductal (www.ductal.com), which has tensile as well as compressive strength."

In Brussels, Samyn and Partners used a combination of fiberglass and steel fabrics for the equally dramatic elevated Erasme Metro station that opened in September 2003. "This is the new terminus station of a major light-rail system," explained design partner Philippe Samyn. "The client was eager to see this station serve as a city gate as well as



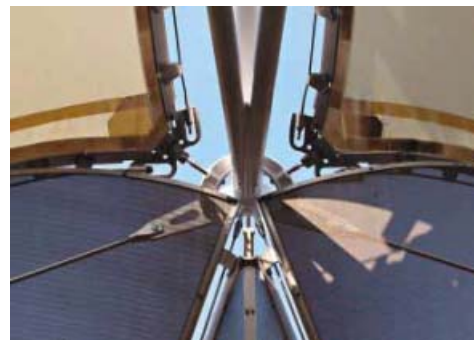
The Erasme Metro station in Brussels, by Samyn and Partners, is a combination of fiberglass and steel fabrics. The fiberglass fabric is

formed into posttensioned "saddles" attached to arched steel frames. The architects chose a stainless-steel mesh,

heretofore used only for sand separation in quarries. It is durable and provides natural ventilation.

linking a major hospital to the city center. It also says, 'Look at us! Use public transport!'

The pedestrian approach, entrance hall, and the central platform are covered by a series of posttensioned fabric "saddles" attached to arched steel frames. The fabric was required to resist wind loads and shield passengers from the rain. The fiberglass fabric, with a life expectancy of 30 to 40 years, provides a temperate light during the day and glows at night. The stainless-steel mesh of the side walls is a product employed for sand separation in quarries. Used for the first time in an architectural application, it is extremely durable, breaks the wind, sheds rain, and provides natural ventilation. According to Samyn, the Ministry of the Brussels Capital Region, Administration of Equipment and Transport, while understandably conservative, was very supportive of the use of fabric.



Where the rubber hits the road

Roads, too, are a fixed system that can carry individuals virtually anywhere. Believing we can pave our way out of the congestion and gridlock, we have developed a high tolerance for road expansion, one that is much higher than our tolerance for rail expansion.

Bus Rapid Transit (BRT), sometimes called a surface subway, is not new. From Curitiba, Brazil, to Ottawa, Canada, communities have invested in highly successful roadway transit systems that use buses, separated in dedicated lanes, which have limited stops at identifiable stations, where fare is collected prior to boarding and service is frequent. Often cast as a substitute for light rail, it has characteristics of both bus and rail. Although it has dedicated lanes, they may either be physically separate or instead may include right-turning or emergency or other buses for some sections of the route. When the BRT bus shares the public road, it often communicates directly with the traffic signal system to get priority at intersections. Deviations from the route or changes are easier to implement with BRT than with fixed rails. New technology will further distinguish it from its conventional rail and bus siblings.

This summer, Las Vegas will be the inaugural U.S. site for the Civis bus rapid-transit vehicle manufactured by Irisbus of France. Called MAX by its owner and operator, the Regional Transportation Commission of Southern Nevada, it will have all the features of other BRT systems except the driver is aided by an optical guidance system, which uses cameras to follow painted lines in the road. For a vehicle in a dedicated lane, the guidance system keeps the bus on its course. There is a driver who can take over controls with the touch of the hand. Because MAX will share the road with other vehicles, the optical guidance system will be used for precise docking at each station. MAX will stop each time at the same place in front of the whimsical new shelters designed by Assemblage Studio Architects of Las Vegas.

Looking more like a monorail or a bullet train than a workaday bus, the Civis bus is typical of new-style buses that aim for sleeker looks



Assemblage Studio Architects of Las Vegas designed a whimsical shelter for a state-of-the-art bus system to be introduced this summer.



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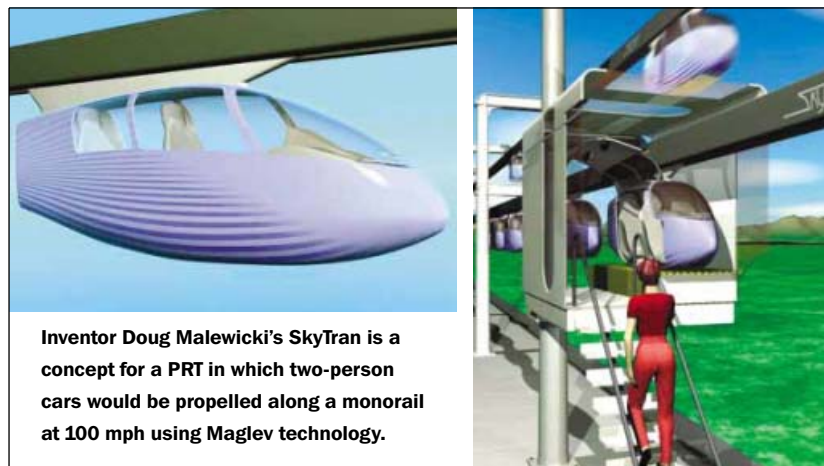
and improved accessibility. Aerodynamic design, hybrid diesel-electric propulsion for fuel economy, and four doors and a low floor for easier loading are typical of advances in bus design. Low-floor buses appeared in Europe at least 10 years ago and came to this country about five years ago when rental car companies began experimenting with them for transporting customers from the terminal to their lots. Dropping the floor of the bus lower to the ground makes it much easier for most people to board, with or without suitcases and packages. On long buses, there is a high central section to clear the axle, which reduces the overall advantages. The Civis bus improves this by removing the central axle and powering each wheel with its own motor, making the entire bus universally accessible.

MAX will have the added advantage of integration with the local bus system. Passengers pay one fare once to ride on any part of the system. If the first transportation choice is always one ride door-to-door, then every time a person changes seats, it must be seamless. Local fare integration and single payment isn't common yet; regional and larger-area integrated fare systems are indeed a rarity. Within 10 years, the experts say, one will be able to change from the Maglev train to the BRT to the local system with a regional-transit-fare card, leaving cash and fumbling at machines or fare kiosks behind. Toll-road technology is at

"DIMENSIONS TO IMPROVE 'CONNECTIVITY' INCLUDE FACILITY DESIGN, SERVICE PLANNING, AND SERVICE CONTROL."

hand for the transit system. A prepaid device (presumably some kind of card) will automatically calculate and deduct the cost of trip segments. It will be automatically replenished and a record of all transactions will be available on demand.

Seamless transfers mean never having to stop to pay a new fare, and having the bus turn up within minutes of your arrival. If we can't make the trains run on time, how will we ever be able to make the buses run on time and in the places where they are needed? Answers to that question may come, in part, from the research of Professor Nigel Wilson, of Massachusetts Institute of Technology's Center for Transportation and Logistics, and his students. Wilson observes, "Dimensions to improve 'connectivity' include facility design, service planning, and service control." Transit operators are already collecting vast amounts of information about their riders from fare-card readers and automatic passenger counting. Buses are being outfitted with satellite Global Positioning Systems (GPS) that will help control centers track bus locations.



Inventor Doug Malewicki's SkyTran is a concept for a PRT in which two-person cars would be propelled along a monorail at 100 mph using Maglev technology.



Taxi 2000's SkyWeb Express is a Personal Rapid Transit (PRT) system. Passengers select a destination, purchase a ticket, and enter a vehicle. Guideways take the cars directly to their destination without stopping.



Knowing where the vehicles are at any moment means being able to inform passengers of when to expect the next bus, just as rail systems commonly do already. It also means that adjustments can be made quickly to respond to emergencies or other short-term events. Collecting information on who goes where and when will improve route and capacity planning for better service design on average days. Small buses can run on low-volume routes during the rush hour and on higher-volume routes to increase frequency in the nonrush periods. Schedules between bus feeders and rail transit can be coordinated for expected connections.

Way down the road

There is, of course, also a system to appeal to those who want their own vehicle to go where they want, when they want. Skyweb Express (www.skywebexpress.com), SkyTran (www.skytran.net), and CyberTran (www.cybertran.com) are just three variations on Personal Rapid Transit (PRT) that comes on demand and takes you to your specific destination—as long as it is on the guideway system. In its most common form, small cars that may hold from two to 20 people run on lightweight elevated tracks or guideways. Stations, which can even be located within buildings, are off the guideway, so other traffic moves freely past loading and unloading vehicles. Rather than traveling on fixed routes, passengers program the vehicle, just like an elevator, for pick up and drop off anywhere along the network. Proponents cite convenience, safety, energy-efficiency, and low capital costs as advantages. These are still the domain of *The Jetsons*, but someday, in a well-connected transportation network, they may become a reality, too.

In the robust transportation system of the future, we will have many surface modes, each doing what it does best: longer distances at very high speeds; medium distances by thoroughly integrated networks; and short distances by bicycle, car hire, self drive, or PRT that reach every door. ■

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Zoom In

Bahá'í Mother Temple, Santiago, Chile

By Deborah Snoonian, P.E.

When Toronto firm Hariri Pontarini Architects won a competition for a 21,000-square-foot place of worship in South America, it turned to Gehry Technologies to help it achieve a form that was both highly organic and buildable.

Leaders of the Bahá'í Faith, which has five million members worldwide, wanted a nine-sided dome structure with nine entrances to signify openness to all peoples, says principal Siamak Hariri, himself a member of the faith. Hariri and his team developed what he calls "a glowing temple of light" clad with nine graceful, draped "leaves" of translucent alabaster. "We sought symmetry in the form," notes Hariri, not only to signify the faith's ideals of equality and harmony, but also for pragmatic reasons: Symmetrical structures are generally cheaper to build and easier to reinforce structurally (the temple is located in a seismic zone).

Achieving symmetry meant manipulating numerous physical and digital models. With engineers Carruthers and Wallace, the designers used Maya software to model the "leaves," then spent a week with Gehry Technologies in California refining them and analyzing the structure in CATIA. "It was exciting. We came away with a richer understanding of using technology to achieve design goals," says Hariri of working with the Gehry team. The temple will open in 2007. ■

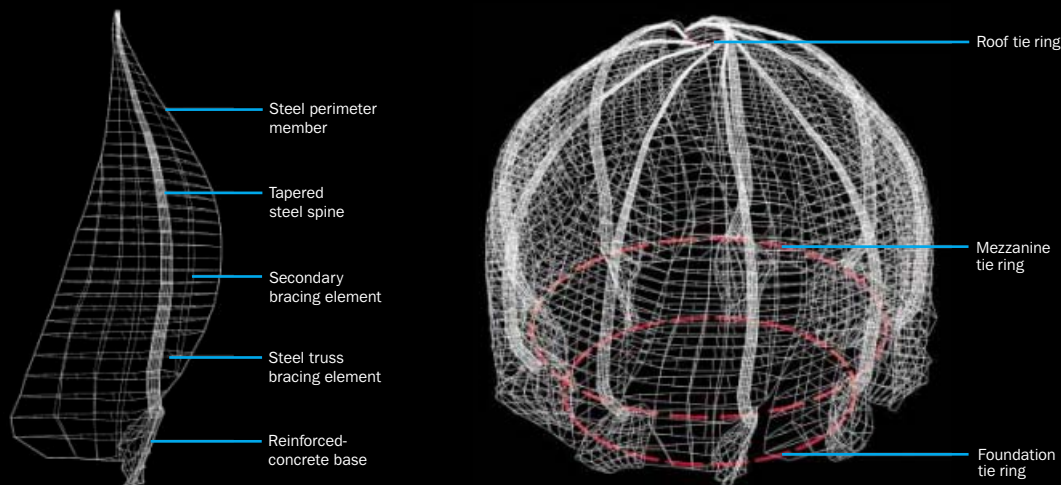


Designers "panelized" the surface of each "leaf" to minimize the number of stone slabs that need to be cut to conform to its curves (above). Circular in plan, the temple will seat 600 people (below).

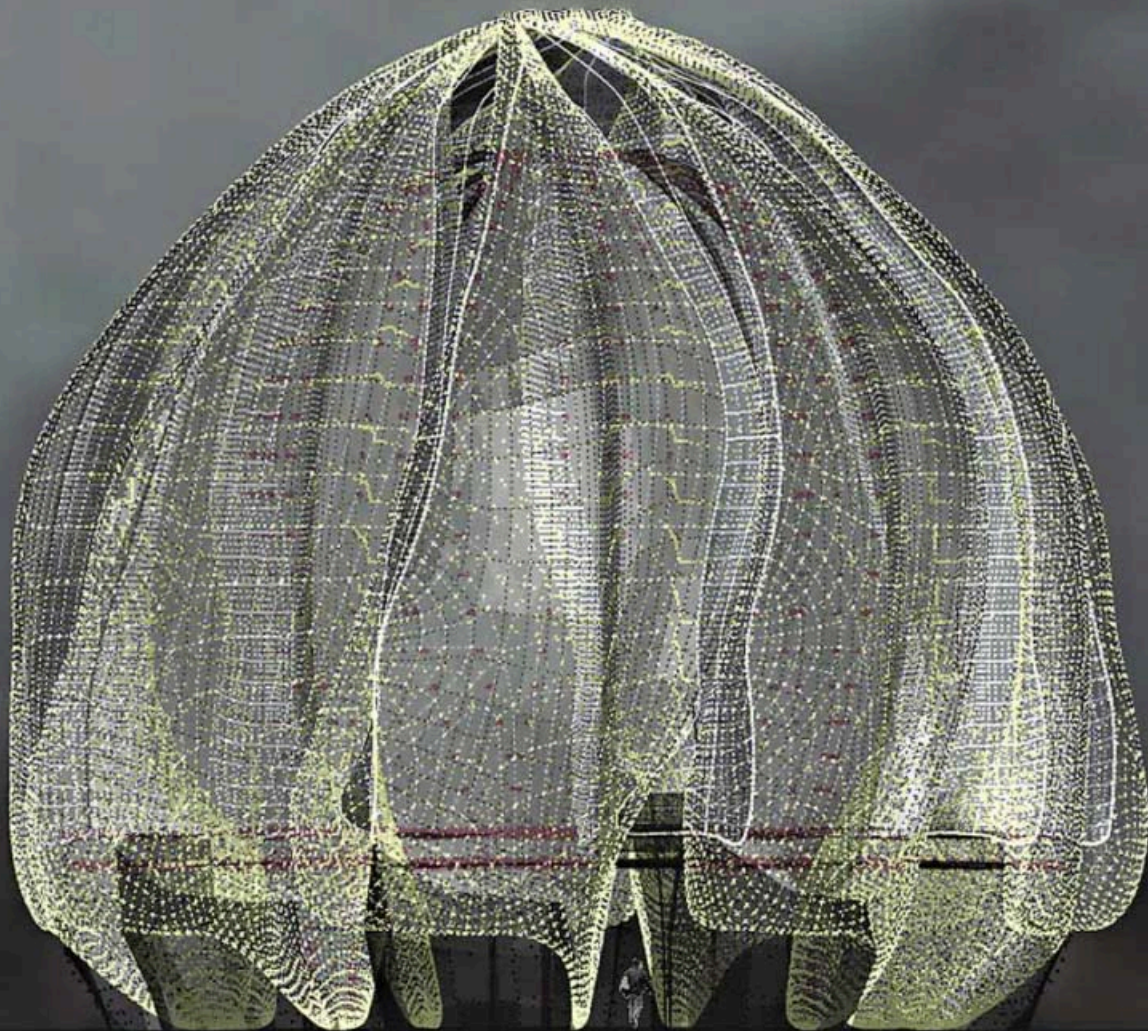


IMAGES: COURTESY HARIRI PONTARINI ARCHITECTS

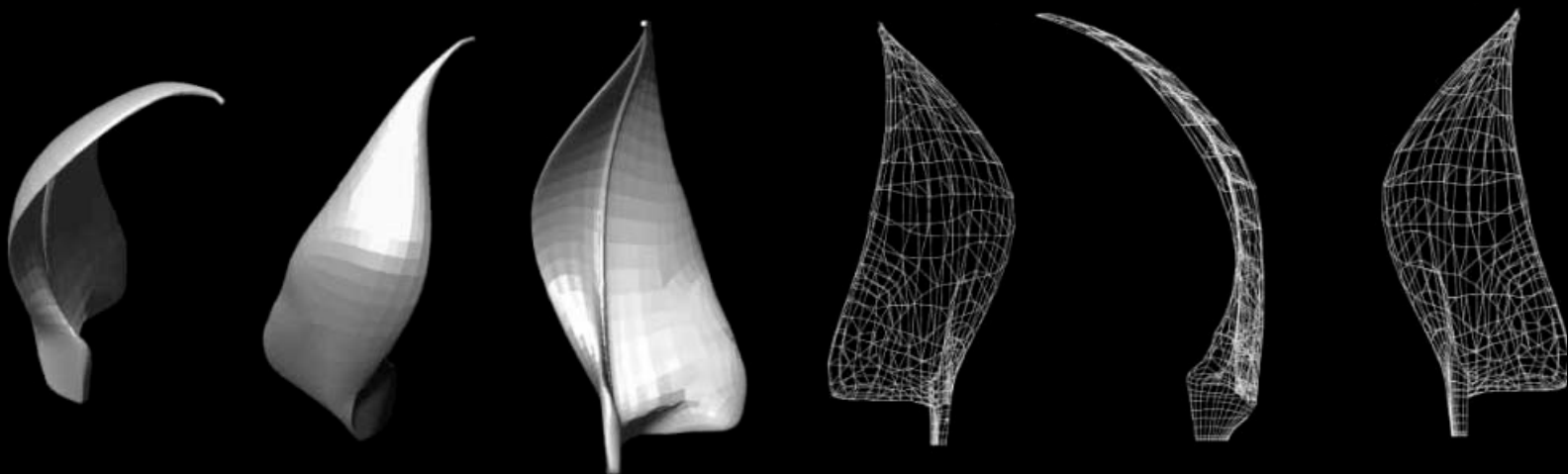
A structural system that mimics Mother Nature



Nine identical curved panels, each anchored to a reinforced-concrete base, enclose the Bahá'í Temple. Structurally, they are supported by central vertical spines—like real leaves—from which branch the secondary steel supports that bear the load of the stone exterior and wood interior. Tie rings at the roof, mezzanine, and foundation levels provide lateral stability.



A highly nonorthogonal building calls for complex structural analyses made possible by serious number-crunching software. Using CATIA, the design team analyzed the temple's form and loads to determine where to add reinforcements and stiffening members for the steel endoskeleton.



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Tech Briefs

Sustainability: Research addresses whether products with recycled content offgas more than conventional products • **Interoperability:** Building professionals to collaborate on standards

BYTES

The [AIA](#) and the Department of Energy's [National Renewable Energy Laboratory](#) will sponsor the [2005 Solar Decathlon](#) next fall, with 19 university teams designing and building energy-efficient homes on the National Mall in Washington, D.C.

[Tholos Systems](#) of Austria plans to install king-size [videoconferencing centers in public spaces](#) in London and Vienna this year. The booths are circular, with 360-degree high-definition televisions 10 feet tall and 23 feet in diameter, and will be host to tourist information and other content.

At the opening of the Stata Center at MIT in May, [Gehry Technologies](#) demonstrated its new software, [DIGITAL PROJECT](#), a design package based on Dassault's CATIA V5.

A 960-square-foot residential experiment in Cambridge, Massachusetts, called [PlaceLab](#) is slated to open soon. It will use sensors, embedded microphones, and tiny cameras to collect data on everything from residents' exercise patterns to the number of times they open the refrigerator. The project is a joint venture between [MIT](#) and [Tiax](#), a local collaborative research and development company.

A new Web site launched by the U.S. Green Building Council and the National Environmental Education & Training Foundation, [GreenerBuildings.com](#), provides case studies, tools, and other resources to help companies understand the business case for sustainability.

Researchers at [UCLA](#) are perfecting an [electrochromic polymer](#) that glows green when an electric charge is applied to it, adding to the blue and red polymers already available. In time, the polymers will be used to make [flexible and inexpensive displays](#), they say.

California tests conventional and "green" products for emissions



By measuring emissions of paint, furniture, and finishes, California officials aim to develop a list of acceptable products for use in public buildings, such as libraries.

Weighing the health and environmental effects of building products typically means sifting through incomplete, mismatched, or out-of-date manufacturers' literature, government documents, and lab data. Officials in California, perennially the green-building trendsetter among states, recently stepped into the breach by publishing the results of emissions tests on paint, ceiling panels, carpeting, wall components, flooring, and other indoor products that are manufactured both conventionally and with recycled content. Their work will make it easier for designers to compare available products and anticipate their impact on indoor air quality (IAQ).

The tests were coordinated by two different groups—a state agency, the California Integrated Waste Management Board (CIWMB), and the nonprofit Collaborative for High Performance Schools (CHPS). They were based on the state's special environmental requirements specifications (Section 01350) for sustainable building projects. The tests screened for more than 70 substances, including ammonia,

benzene, chlorine, and toluene. To establish the limits in the specifications, researchers drew up a list of chemical compounds typically found in indoor air, calculated safe exposure levels for a 20-year period, and halved those figures to establish maximum allowable emissions.

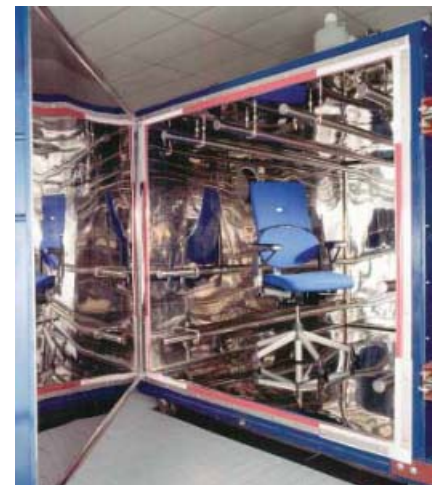
So far, the data suggest that conventionally manufactured products and those that contain recycled content have roughly similar emissions profiles. Many of the products failed to meet the state's public health emissions standards for this criterion, most on the basis of a single chemical, according to officials. Big chemical offenders included naphthalene, formaldehyde, and acetaldehyde, which are tied to respiratory and eye problems. The 01350 tests helped counter the perception that products containing significant recycled content are worse for IAQ than standard products, according to Tom Estes, manager of the waste management board's

sustainable building program. "Emissions are really dependent on what you put into the material, regardless of whether it's virgin or recycled," says Anthony Bernheim, FAIA, managing principal and head of green design at SMWM in San Francisco and an adviser for the state's research efforts.

The tests funded by the waste management board were conducted by the California Department of Health Services (DHS), which evaluated 77 samples of interior building products. After a 10-day airing-out period, products were prepared as they would be for assembly or

installation (e.g., adhesives applied to carpets) and tested for 96 hours in a sealed chamber. The measured concentrations are used to model estimated concentrations in typical classrooms or offices, based on assumed spatial dimensions and ventilation rates.

In a concession to manufacturers, vendor and product names have been omitted from the most detailed results, but the testing is



For emissions testing, products like office chairs (above) are sealed in a chamber where offgasses are tested.

Tech Briefs



California's push to improve indoor air quality has strong support by the school districts.

yielding useful data. "It's the first time as architect that I have a tool I can take to the manufacturer and say, 'If you don't exceed this level, you're okay,' where the level is based on health," says Bernheim. ASTM officials are considering

adopting the test protocols as standards.

In some cases, the California studies have led manufacturers to reformulate their products or pay closer attention to contributions from raw-material providers and supply-chain partners, something that the green-building community has encouraged for many years.

The waste management board report is available at www.ciwmb.ca.gov/greenbuilding/specs/section/metstudy.htm, and a list of products that passed the tests for the state's Capital Area East End Complex office project is available at www.ciwmb.ca.gov/greenbuilding/specs/eastend/. The DHS is now monitoring the long-term emissions of materials in the East End facility, according to officials.

The Collaborative for High Performance Schools (CHPS) initia-

tive, which is ongoing, relies on independent lab tests arranged by manufacturers. IAQ is an optional but commonly addressed category of CHPS's green school guidelines. The testing program stems from efforts by the Los Angeles Unified School District to list products that meet Section 01350 standards. Qualifying products are added to a Web site,

www.chps.net/manual/lem_overvw.htm, as manufacturers submit their test results.

Officials stressed that the specifications note only emissions levels for products, not other environmental measures, such as embodied energy and pollution generated during manufacturing and distribution.

Ted Smalley Bowen

Building industry professionals gather to pledge commitment to interoperability

In late April, more than 30 industry associations, professional organizations, government agencies, and software companies assembled at the AIA's headquarters in Washington, D.C., to explore opportunities to promote the adoption of open standards for digital data exchange in the design and construction community. By the end of the meeting, each attendee had signed a pledge to work across organizational boundaries toward

the so-far-elusive goal of interoperability—in which hardware and software made by different vendors work together seamlessly, so that users in disparate groups can exchange digital design information effortlessly throughout the life of building and design projects. Achieving this goal, industry leaders say, will allow buildings to be erected faster and cheaper, as well as operated more effectively and efficiently. *(continued on page 302)*

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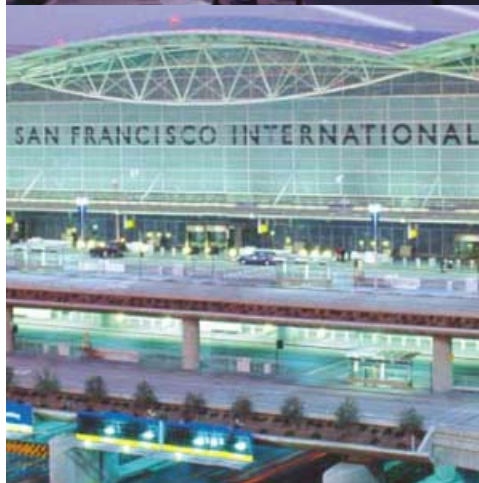
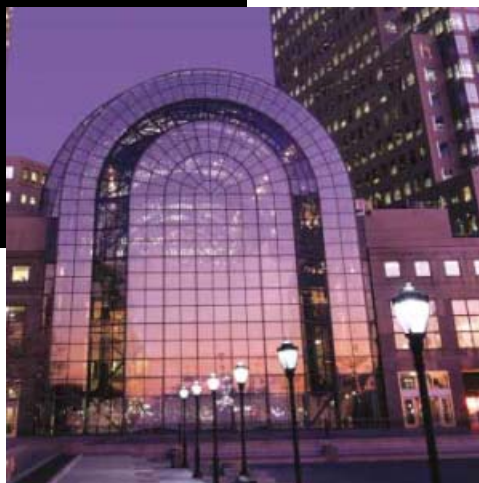
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Tech Briefs

The gathering differed from past efforts in that organizers emphasized what the participating groups could do as a whole to promote open standards and interoperability, instead of focusing on individual efforts by a single group or company in particular. "These groups are competing within a small community: No one gets sufficient funding or attention to be effective. And up to now, efforts to develop standards have been fragmented and uncoordinated, and the value of interoperability has not been effectively 'sold' to the professional user community," says of one of the conference's organizers, Jonathan Cohen, FAIA, the former head of the AIA's Technology in Architectural Practice Committee (TAP).

Perhaps the most significant outcome of the meeting was an agreement to establish a Web site,

www.building-connections.org, to serve as a "one-stop" information source about interoperability for building professionals, including case studies and progress updates on achieving open standards. The site's content will be provided voluntarily by the organizations that attended the congress; it will be launched later this year.

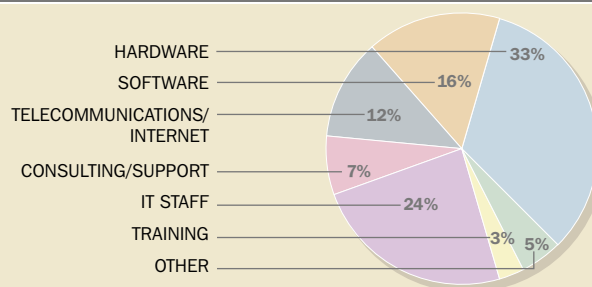
To avoid duplication of effort, two disparate groups that have been working to develop open standards agreed to coordinate their efforts—the National Institute of Building Science (NIBS) and the Open Standards Consortium for Real Estate (OSCRE), a group begun in 2000 by private-sector managers for Cisco, Intel, and other technology companies.

The group will meet again in early June to set forth a more detailed agenda for collaboration. *Deborah Snoonian, P.E.*

What the Numbers Say

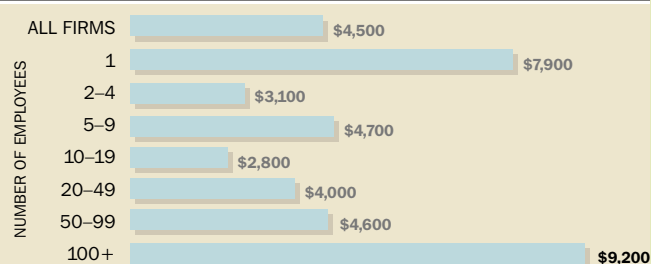
What does your firm spend on IT? Not surprisingly, the 2003 AIA Firm Survey revealed that the costliest IT items are hardware and personnel (top) and that single practitioners and large firms spend more per employee on technology than mid-size firms (bottom).

IT-RELATED EXPENDITURES IN 2002, AVERAGES ACROSS ALL FIRMS



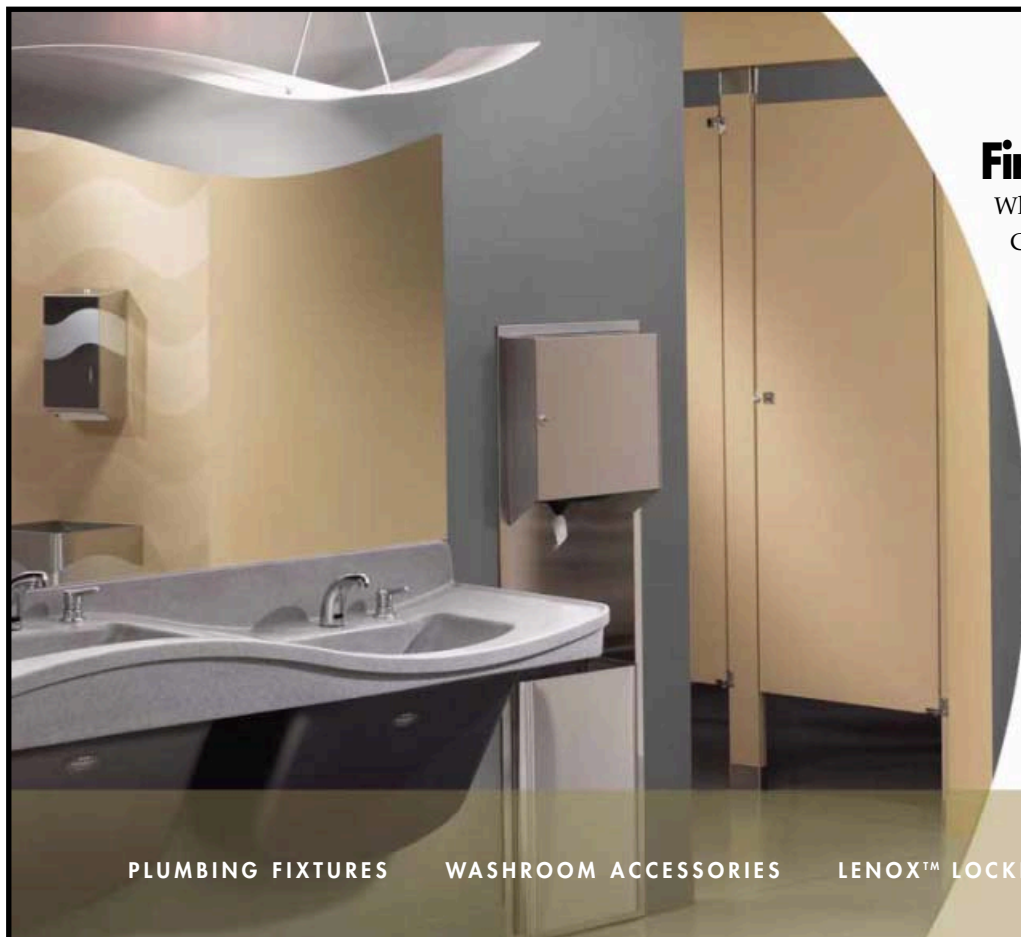
SOURCE: 2003 AIA FIRM SURVEY

SPENDING PER EMPLOYEE, AVERAGE ACROSS ALL ITEMS



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By Deborah Snoonian, P.E.

Green Building Studio

GeoPraxis

www.geopraxis.com

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This free Web-based service provides an analysis of a building's energy characteristics during the conceptual design phase. Users must register for an account at the company's Web site, then download a free software plug-in that works with their 3D CAD system (currently Graphisoft's ArchiCAD and Autodesk's current versions of ADT, Revit, and Building Systems). After completing a conceptual design, the user enters the building's type and location and clicks a "Submit" button that sends design data to the Green Building Studio Web site, where the structure is analyzed for energy performance. Results can be viewed on the Web site or downloaded as a gbXML file that users may share with consultants or team members for more detailed energy analyses using programs such as EnergyPlus or DOE 2.2.

Architectural Desktop 2005

Autodesk

www.autodesk.com

Windows only

Autodesk's latest version of ADT, its original 3D CAD program, includes a new "details" feature with a library of built-in, editable components, as well as automated routines that help users draw details more quickly. Objects cre-

For more information on technology for architects, including reviews, vendor lists, and links, go to Digital Architect at www.architecturalrecord.com.

ated within ADT are now compatible with the company's Building Systems software for collaboration and file-sharing purposes, and the interface now supports third-party programmers who wish to create niche applications for engineering analyses. The software also supports the Industry Foundation Classes (IFCs) developed by the International Alliance for Interoperability by way of translation software.

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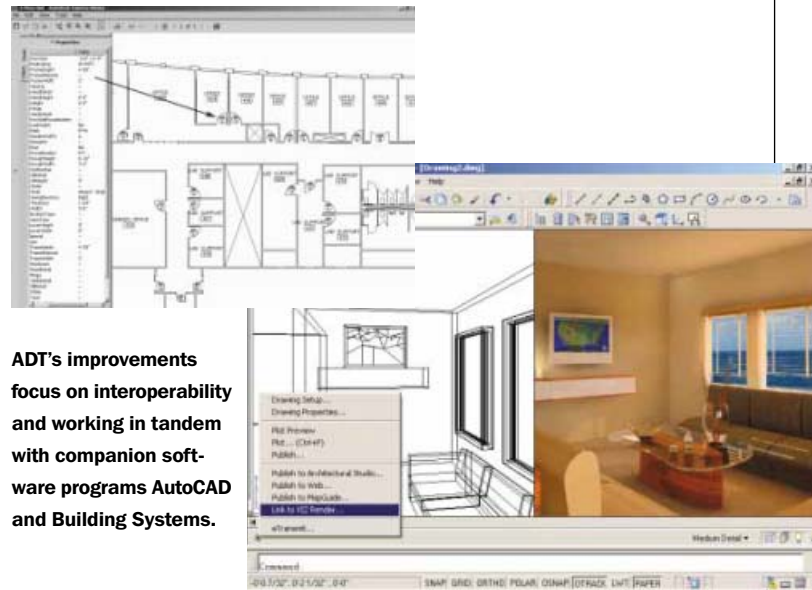
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This Windows XP-compatible computer boasts the number-crunching power of a conventional laptop at a fraction of the size and weight (4.9 inches by 3.5 inches by 0.9 inch, weighing 14 ounces). The ultra Personal Computer (uPC) comes equipped with a 1-gigahertz processor, a 20-gigabyte hard drive, a color display screen, and Firewire and Bluetooth wireless capabilities. A USB port lets you add a mouse or another peripheral device; a miniature keyboard, mouse buttons, and thumbwheel allow data input and navigation. When connected to its docking cable, the uPC can be enhanced with audio and Ethernet functions or a second USB or FireWire port. Though it's not souped-up enough to manipulate CAD files, the uPC represents a viable option for those who want to tote more power than a handheld organizer offers, but with a lot less bulk than a laptop. The company says the uPC will be widely available by summer 2004.



GeoPraxis offers free energy analyses for conceptual designs.



ADT's improvements focus on interoperability and working in tandem with companion software programs AutoCAD and Building Systems.



Only a bit larger than a handheld organizer, OQO's ultra PC packs more computing power.

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www.commonpointinc.com

Windows only

Common Point's founders first began working with simulation construction sites at Stanford's Center for Integrated Facility Engineering (CIFE). Project 4D, its flagship program, adds a fourth dimension—time—to a typical 3D building model so that users can visualize construction activity for a building or group of buildings and manage the schedule accordingly, to ensure that conflicts and delays are minimized. The software uses information imported from a variety of existing CAD and scheduling programs. ConstructSim is a "visual collaborative environment" for a project team, integrating data from Project 4D as well as engineering, procurement, and materials-management software for

a more comprehensive management effort.

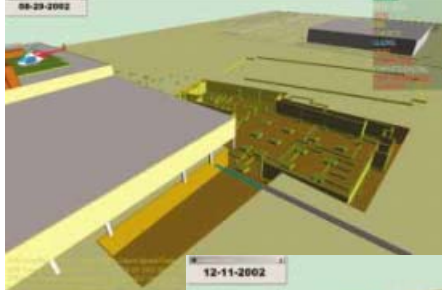
Speech Privacy Predictor

Armstrong World Industries

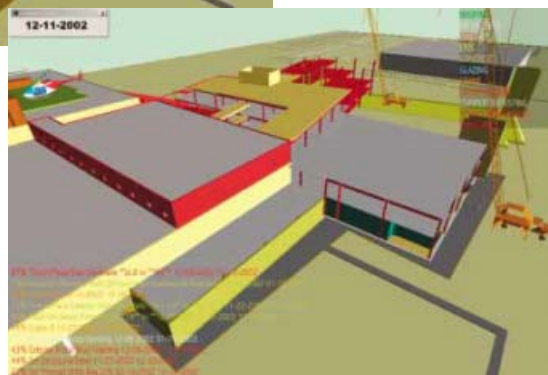
www.armstrong.com/speechprivacy

Windows or Mac

A company known more for ceiling panels than software, Armstrong has created a design aide for predicting the acoustic performance of spaces like offices and health-care facilities where speech privacy is a high priority for occupants. Users enter the dimensions and materials of a space as well as the distance between talkers and listeners. The software returns a Privacy Index (based on an ASTM standard) that tells the user whether a design is achieving the project's speech-privacy goals, as well as options for improving performance.



Common Point's offerings allow teams to see how construction will proceed, so they can identify potential conflicts and trouble zones.



Armstrong's acoustic tool analyzes room geometries and materials in order to forecast speech privacy.

IMAGES: COURTESY COMMON POINT (TOP TWO); ARMSTRONG (BOTTOM)

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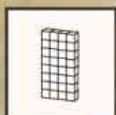
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www.nemetschek.net
Windows and Mac

Improvements in drawing efficiency are the hallmark of Nemetschek's update of its CAD package for architects. A database for notes lets multiple designers share a common set of annotations and text for drawings that are used repeatedly, and new page-layout features let designers compose drawing sheets that combine multiple views of the same design at different scales and sizes, including text and annotations. New building objects, such as a ceiling-grid tool and a stair tool, make enhancements to building details easier to draw and manage. Built-in rendering modes now include options for softening hard-edged drawings so they appear hand-sketched.

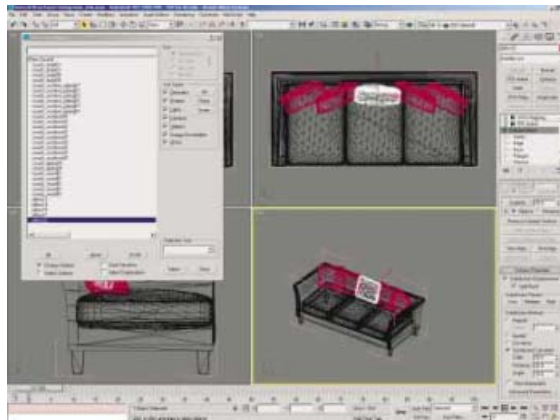
VIZ 2005

Autodesk
www.autodesk.com
Windows only

Autodesk says that VIZ is to digital 3D modeling what clay is to physical modeling—a medium for highly mutable, early-stage exploration of design options. One major new feature of the latest VIZ release, the incorporation of mental ray's rendering technology for global illumination, lets ambitious designers create ultra-high-quality photorealistic renderings by capturing subtle lighting effects and shadows within a space. Other new features include an architectural materials library; better editing features for splines, polygons, and patch objects; and improved cross-platform compatibility with other Autodesk products. ■



Changes to the latest release of VectorWorks ARCHITECT include libraries of notes and improved page-layout features.



Global illumination lets VIZ users make realistic renderings.

IMAGES: COURTESY NEMETSCHKE NA (TOP); AUTODESK (BOTTOM)



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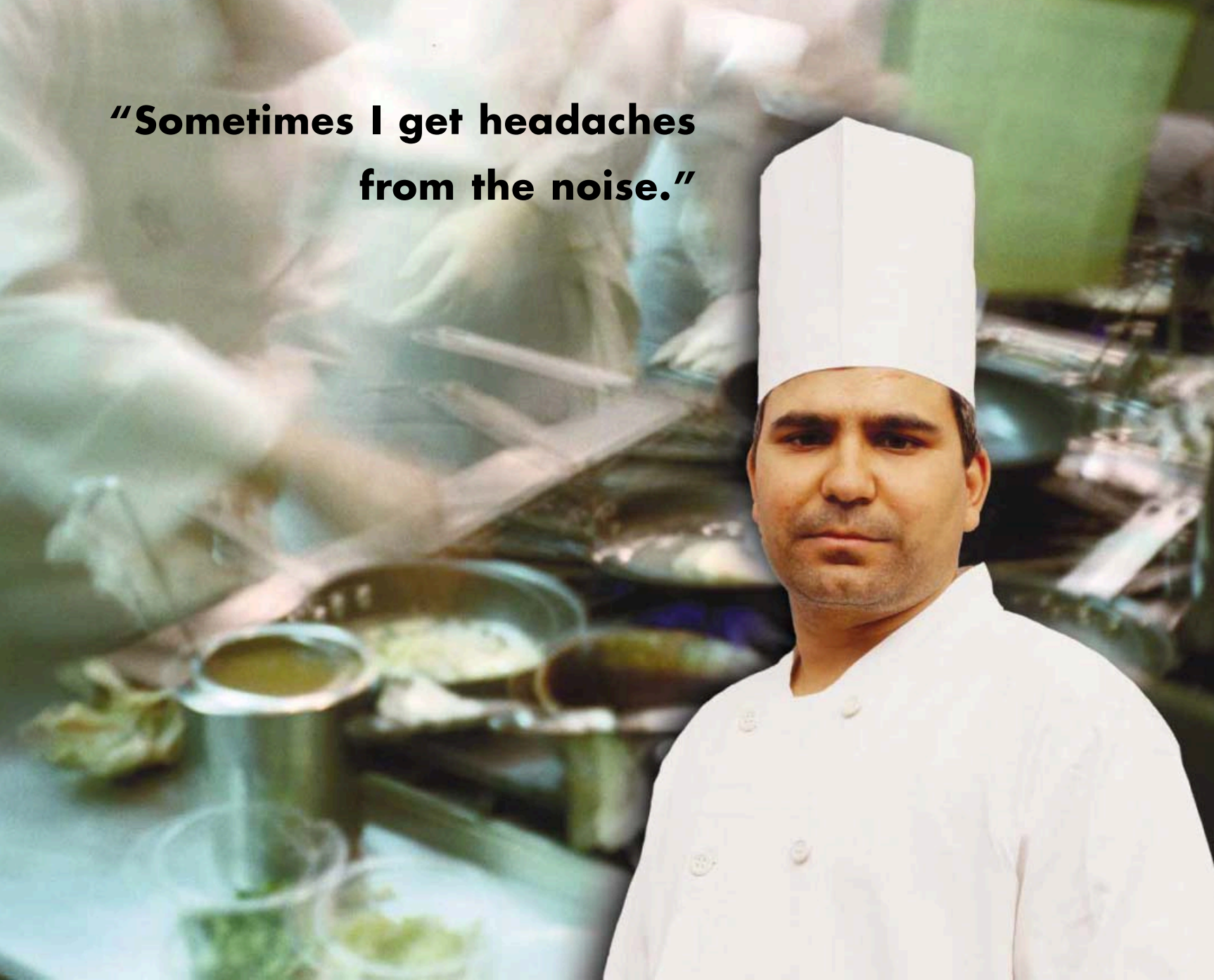
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JELD-WEN PRESENTS

Window Installation:

Last year, there were 300,000 mold damage claims in the U.S.; insurance company payouts skyrocketed to \$1.5 billion...

Can your firm afford to ignore the problem?

The Sacramento, Calif., law firm of Sieving & Momjian specializes in construction law, most often in defense of manufacturers involved in construction defect claims.

CONTINUING EDUCATION

Use the learning objectives below to focus your study as you read **Window Installation**. To earn one AIA/CES Learning Unit, including one hour of health safety welfare credit, answer the questions on page 315, then follow the reporting instructions on page 386 or go to the Continuing Education section on archrecord.construction.com and follow the reporting instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

- Have a broader awareness of the changes underway in the U.S. window industry.
- Understand the methodology of successful window installation.
- Appreciate the role architects must play to insure “leak-free” structures.

“Ninety-five percent of the cases we are involved with involve some kind of water-intrusion claim,” says principal Richard Sieving.

Why do we bring the issue up here?

Very simple.

If you haven’t yet been called to give depositions about your role in designing fenestration installations, consider yourself lucky. Chances are, you will be.

“The situation in California is out of control,” says Sieving. “The success rate of lawyers here, and the magnitude of the awards in construction defect cases has attracted the attention of attorneys in other states. The problem is spreading.”

If you think that your firm is diligent, and, therefore, immune, think again.

“The prevailing shotgun approach (by attorneys) implicates virtually every party involved in a failed building—regardless of culpability,” says Thomas Butt, FAIA, a Richmond, Calif., city councilman, and principal-in-charge of Richmond-based Interactive Resources, a traditional design firm with an emphasis on forensic and diagnostic architecture.

“Mold” has become to the legal profession what asbestos was a decade or two ago. Every personal injury attorney with a license on the wall is looking to file mold-damage claims because, sources say, mold damage is a quicker and surer route to a courtroom payday than traditional, more often than not long-lasting, construction defect claims.

“Insurance companies also tend to cover personal injury claims involving mold more readily than they do defective construction claims,” says Sieving.

The payoffs are sometimes enormous: awards to policyholders of \$1 million or more are becoming almost routine. In New York City, more than 300 tenants of an apartment complex with mold problems filed a class action lawsuit in excess of \$10 billion. In many cases, settlement figures are in excess of \$500,000.

“A recent case in Santa Clara,” Sieving says, “involving a construction defect claim on a high-end single-family home, resulted in a final award of \$3.2 million, \$600,000 of it to repair construction defects, the remainder for personal injury

Window Installation.

New Construction Vinyl Window and Nailing Fin



1. Check rough opening



2. Apply flashing to sill



3. Nail continuous support to sill



4. Apply drain screen



5. Inspect window



6. Place window into opening



7. Install window



8. Install flashing



9. Roller flashing



10. Tape down house wrap



11. Seal window

New Construction Vinyl Window and Nailing Fin

Building wrap applied to rough opening and trimmed 3" away from the rough opening edge at the head and sides. At the header corners, building wrap should be slit back 9" at a 45° angle and taped up and out of the way.

- STEP 1** Check for square; check sill for level
- STEP 2** Apply self-adhesive flashing to the sill
- STEP 3** Nail the continuous support (shim) into place on the sill
- STEP 4** Apply drain screen
- STEP 5** Remove window packaging; inspect window; secure window locks
- STEP 6** Place window into opening
- STEP 7** Install window: fasten one bottom corner through nailing fin and check window for level; fasten through nailing fin around window
- STEP 8** Apply flashing
- STEP 9** Roller flashing
- STEP 10** Drop down building wrap that was taped up at the header; tape down
- STEP 11** Seal corners with caulk

(the plaintiffs alleged, among other things, that a learning disability of one of their three children was related to mold infestation). I know a California attorney who, all he does is try mold cases alleging personal injury. He doesn't win a lot of cases, but every once in a while he rings the bell, and when he does, it is a loud ring."

Orange County-based Danelian Associates, a 60-person design firm, watched its insurance premiums rise every time the firm was named in a lawsuit. "Until five years ago, we were named in many suits," says principal-in-charge, Art Danielian, FAIA. "None of them had to do with design errors, and none of the cases ever went to court. In most cases, attorneys alleging problems never even have to discuss the merits of their case. A judge just looks at whether there are insurance (pools) from which to draw."

The California uproar over construction defect claims—and a massive lobbying effort by the construction industry—led, in 2002, to the enactment of SB 800, the state's "right-to-repair" law, which for the first time, set clear performance standards for building components. At last count, 17 other states had followed California's lead and had enacted, or were prepared to enact, right-to-repair laws.



Tools required for window installation.

Following passage of SB 800, *The San Diego Tribune* asked editorially "Is it Safe to Build Condos in California Again?" In some California counties, San Diego County among them, every condo project built in the past 20 years had been litigated for construction defects. Construction defect lawsuits brought California's condominium and townhome construction to a virtual halt in the early 1990s. SB 800 was a measure lawmakers hoped would turn the tide.

The first ASTM minimum installation standards, three years in the making, also were introduced in 2002. The ASTM standards are technical. They are 196 pages long, and they are expected to cause considerable confusion at the jobsite.

The International Residential Code (IRC) was amended by the ICC last year in Nashville to read, in part: Windows shall be installed and flashed in accordance with the manufacturers written installation instructions. Each window shall be provided with written installation instructions provided by the manufacturer....

Over the past two years we have also seen code changes across the U.S. and in Canada. In Vancouver, B.C., developers are now required to hire "building envelope specialists" to review designs. Elsewhere, Right-to-Repair laws have put the performance of fenestration products and their installation into the civil code.

"The leading manufacturers have gone from a dearth of installation information to a plethora," Butt says. "Unfortunately, most of it is complex, hard to read, difficult to understand and overly optimistic that a construction worker will implement it—particularly if it is not translated into Spanish or some other language."

Couple regulatory confusion with technological change—there are now dozens of new, competing sill flashing and pan methodologies available on the market for the first time—and the water becomes even murkier.

"Installation methodology has come a long way in the past several years, and it is important that architects understand the changes that are underway and acknowledge their role in finding solutions," says Ward Deems, FAIA, the former principal of a San Diego design firm, now an architectural consultant to an Oregon-based window manufacturer.

"These changes," says Deems, "were driven, in part, by litigation. The industry has found that it needs a coherent installation program. Yet, the industry is one in which a majority of installers most likely have no high school education, and may or may not speak English. We have a major problem."

The most proactive of U.S. manufacturers by now have gone to considerable time and expense to prepare detailed installation instructions to accompany their products and have mounted campaigns that include box lunches with architects and job site meetings to get the new message across.

"These cases cost a huge amount of money to defend," Sieving says, **"and more and more we are seeing architects drawn into the debate. Attorneys allege that installation design was insufficient. Even if designers are not party to (original) lawsuits, the allegation of design deficiencies eventually becomes an issue in virtually every case."**

The issue is of such topicality that the AIA will, for the first time, present three continuing education seminars on water intrusion and mold prevention at the institute's 2004 National Convention and Expo at Chicago's McCormick Place June 10–12.

Manufacturers' installation instructions are likely to be complex, overly detailed and, in many cases, redundant, because it may take a certain amount of redundancy to ensure that water intrusion is kept to a minimum.

"Beginning in 1995, we began to see significant increases in water intrusion claims—both non-litigation claims (warranty requests) and litigated claims," says Wally Corwin, corporate manager of product integrity for a leading window and door manufacturer.

Water intrusion issues have grown both in number and as a percentage of total claims faced by the manufacturer, Corwin says. Add to that the significant growth of "sick building" or mold claims and the increase is dramatic in all areas (number of claims, size of claim, complexity of managing cases and the length of time until resolution). Our investigations and inspections have shown that just a little over 73 percent of the water intrusion claims are, either fully,

or in part, installation-based. These figures are consistent with other reports within the U.S. and research studies from other countries, including Canada and New Zealand.”

The problem is not isolated to any one manufacturer’s product or to the continental United States. Many factors have fueled the increase in claims and the extent of damage, Corwin says.

“We can cite changes in construction materials, an increased susceptibility of construction materials to water damage, changes in construction technique, the “industrialization” of the building industry, larger homes, increased exposure, tighter homes, increased use of HVAC, increased use of sealants, more lawyers, poor customer service.”

General Errors That Lead to Failure

Our investigations, Corwin says, point to a number of general errors that were the root cause of a majority of the installation failures we observed:

1. Improper use and application of sealants as moisture barriers.
2. Failure to tie the water plane of the window into the weather plane of the wall.
3. Improper lapping and installation of flashing and weather membranes.
4. Failure to properly shim and attach the fenestration product into the rough opening.
5. Failure to understand the long-term performance and compatibility of products used in the installation.
6. Failure to provide a secondary system to handle water when the primary system failed.
7. Failure to protect the space between the fenestration product and the rough opening from excessive air pressure.

In response, Corwin has developed what he calls “The 11 Theories of Installation.” Many installation materials and techniques may be used to achieve a successful installation. However, all installations must abide by the following general principles:



1. Build redundancy into the system. Fenestration products without welded corners and integral nailing fins will allow some water to enter through exterior joints. Direct any water to the exterior.
2. Tie the water plane of the window to the weather plane of the wall (usually building wrap) in a waterproof and contiguous manner. Failure to do this will allow water to penetrate through the gaps and to enter the wall cavity.
3. Sealants must conform to the Joint Design and Expansion/Contraction Parameters specified by the sealant manufacturer.
4. Shim in a manner that reduces frame rotation under loading (wind, settlement, rough frame motion).
5. Fasten to the rough opening in a manner that does not put undo stress on the fenestration components and anchors the product into the opening so it will not be dislodged.
6. Install the fenestration product square, plumb and level. It shall not have sags or bows that hinder the proper operation of the product product components.
7. Apply all flashing in a shiplap manner and tie into the weather plane of the building.
8. Move the flashing failure point as far as possible from the interface of the rough opening and the fenestration product.
9. Protect the head of the fenestration product from the accumulation of water.
10. Any flashing or pans used must self-seal if penetrated by nails, staples or screws.
11. Reduce all air flow around the fenestration product to the lowest level possible.

Additionally, Corwin says, it is critical that an architect or structural engineer design the window installation for sill heights more than 35 feet above ground level and for construction methods other than fully-sheathed walls or open stud walls because openings over that height are subject to wind loads that may be in excess of the normal installation design.

‘Better’ Building Has Caused the Problem

Ironically, “better” building is a major contributor to the problem.

Modern construction techniques have changed dramatically. Energy conservation requirements have led to many changes, focusing primarily on air-tight structures. This drive has dramatically improved the energy efficiency and comfort level in modern homes. It has also sharply reduced the “breathability” and airflow of those homes.

It is common for homes and commercial buildings to be fully wrapped from floor to floor with a single sheet of nine-foot building wrap, like polyester weather-resistant barrier, in contrast to the traditional approach of multiple strips of three-foot-wide building paper.

Many homes also have a vapor barrier on the interior. As a result, air no longer moves through the wall structure and homes, generally, are no longer drafty. When air could move easily through the wall structure, any water that entered the wall would dry out in a relatively short period of time. Today, however, water entering the wall does not dry out quickly and may lead to the conditions that result in fungal infestation.

In addition to retarding natural drying within the wall structure, the increased air tightness of modern structures frequently leads to reduced air pressure inside the structure when air exhaust systems (kitchen and bathroom ventilators, furnace and water heater exhausts and clothes dryers) push air out faster than it can enter the structure. This reduced air pressure acts as a vacuum, sucking in air wherever there is a crack or hole in the wall structure.

The smallest cracks and holes experience a capillary effect in which the surface tension of water can pull water long distances into the cracks. The consequence: when water (from rain, snow, ice melt, sprinkler overspray, etc.) is running down the outside of the wall or window, it can be drawn through openings into the structure, leading to increased risk of water damage and fungal infestation. ■

CLICK FOR ADDITIONAL REQUIRED READING

The article continues online at: archrecord.construction.com/resources/conteduc/

To receive AIA/CES credit, you are required to read this additional text. For a faxed copy of the material, contact Joyce Richter at JELD-WEN, (800) 535-3936 or email joycer@jeld-wen.com. The following quiz questions include information from this material.

**AIA/ARCHITECTURAL RECORD
CONTINUING EDUCATION Series**

LEARNING OBJECTIVES

- Have a broader awareness of the changes underway in the U.S. window industry.
- Understand the methodology of successful window installation.
- Appreciate the role architects must play to insure “leak-free” structures.

INSTRUCTIONS

Refer to the learning objectives above. Complete the questions below. Go to the self-report form on page 386. Follow the reporting instructions, answer the test questions and submit the form. Or use the Continuing Education self-report form on *Record's* website—archrecord.construction.com—to receive one AIA/CES Learning Unit including one hour of health safety welfare credit.

QUESTIONS

1. The use of sill pans is now a code requirement in all new residential window installations.
 - a. true
 - b. false
2. The increased air-tightness of contemporary structures may:
 - a. create air pressure differences that lead to a capillary effect, drawing water into the structure.
 - b. result in air pressure differences that may burst dual-pane windows.
 - c. make it difficult to keep pilots lighted, leading to potential fire hazards.
 - d. occasionally make it necessary to leave a window cracked on the down wind side of the structure.
3. California's controversial “right-to-repair” law, at last report had become model for similar legislation in how many other states?
 - a. none
 - b. four
 - c. 17
 - d. 32
4. Recent amendments to the International Residential Code require that windows be installed:
 - a. according to ASTM E2112
 - b. in accordance with manufacturers' written installation instructions
 - c. according to industry “best-practices”
 - d. only under supervision of the design engineer
5. Which of the following “general errors” are seen to be among the “root causes” of a majority of installation failures?
 - a. failure to tie the water plane of the window into the weather plane of the wall
 - b. failure to properly shim and attach the fenestration product into the rough opening
 - c. failure to understand the long-term performance and compatibility of products used in the installation
 - d. all of the above
6. According to one West Coast window manufacturer, what percentage of “water intrusion claims” are, either fully, or in part, due to faulty installation?
 - a. about half
 - b. very few
 - c. nearly 73 percent
 - d. virtually all
7. In construction defect litigation, the allegation of design deficiencies arises, according to attorney Richard Sieving:
 - a. only when architectural detail of installation components is insufficient
 - b. in virtually every case
 - c. most often in design-build projects
 - d. more often in the commercial, than the residential arena.
8. Insurance companies tend to cover personal injury claims involving mold more readily than they do defective construction claims.
 - a. true
 - b. false
9. Older homes are less susceptible to mold infestation than new homes.
 - a. true
 - b. false
10. Specifications defined in ASTM E2112:
 - a. provide assurance against water leakage
 - b. are minimum standards that will not ensure an installation's effectiveness
 - c. are identical, in most cases, to manufacturers' installation instructions
 - d. may be overlooked if you are working with a licensed installer

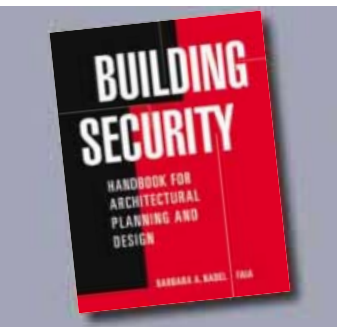


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Italian Tile:

Classical elegance without environmental expense.
Sustainability is the new focus of ceramic tiles of Italy.

CONTINUING EDUCATION



Use the learning objectives below to focus your study as you read **Italian Tile**. To earn AIA/CES Learning Unit, including one hour of health safety welfare credit, answer the questions on page 321, then follow the reporting instructions on page 387 or go to the Continuing Education section on archrecord.construction.com and follow the reporting instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

- Have a better perspective on the international response to the issue of sustainability.
- Understand the degree of commitment of Italian tile manufacturers to the green building movement.
- Evaluate ceramic tile in terms of durability, stain resistance, etc.

"It has been estimated that if the rest of the world were to consume like the developed world, we would need the equivalent of four extra Earths..."

—S_tiles

As part of their activities to promote the knowledge and use of Italian ceramic tiles, the Italian Trade Commission and Assopiastrelle, the Association of Italian Tile Manufacturers, have started a communication campaign aimed at introducing the new characteristics of Italian ceramic tiles, especially with reference to the subject of "sustainability."

The popularity of "green" building has been gaining momentum because of a groundswell of architectural awareness, a deep commitment by vocal members of our profession and widespread acceptance of the perceived virtues of sustainable building.

In late March 2004, the Italian tile industry kicked off a major international campaign it is hoping will push the eco-awareness of the design community even further and address other social and safety issues.

The intent of S_tiles (www.S-tiles.it), the Italian tile industry's new website, unveiled at Coverings 2004 in Orlando, is to tighten the ties of the industry to the international sustainable building movement. It is also a lengthy and detailed, in-your-face, consciousness-raising manifesto.

"It is imperative that sustainable building and construction becomes a major focus of the global sustainable development debate," says Roberto Luongo, executive director for the U.S. at the Italian Trade Commission. "The building and construction sector is one of the largest resource consumer and waste producer in the economy," he adds.

Buildings, according to the S_tile narrative, not only contribute significantly to greenhouse gas emissions in their construction phase, but the energy consumed for their use and maintenance is among the most consumptive of all activities on the planet.

Italian Tile.



Yoder House, Phoenix, AZ / MPJ Design Studio

The modern buildings in which we work rival well-known polluters such as cars and factories as sources of harm to the environment, adding greatly to deforestation, global warming, overuse of water and energy and carbon dioxide emissions, say ceramic tile industry sources. The organization cites a 1995 Worldwatch Institute report that concluded that:

- 55% of wood cut for non-fuel use was destined to be used in construction.
- 40% of global materials and energy were used by buildings.
- 30% of newly built or renovated buildings suffer from "sick building syndrome," exposing occupants to stale, moldy and chemical-laden air.

In every country in the world, the built environment normally constitutes more than half the total national capital invested, and construction represents as much as 10% of GDP (gross domestic product). In many developed countries, in terms of weight, it accounts for up to half of all raw materials taken from the earth's crust. It also accounts for a considerable waste stream. In Europe, says the organization, 40% of all energy use is devoted to the built environment. "The percentage rises to as much as 50 percent in some countries, when construction activities, including material production and transport, are also taken into account."

Those numbers are evidence of the fact that mainstream architecture is still deeply embedded "in the 'modernist, constructivist' tradition," says James Wines, head of Manhattan-based SITE Environmental Design and author of the best-selling *New Wave Organic Architecture*, now in its fourth printing.

"In an 'energy-consciousness' sense, ninety percent of our mainstream designers are as anti-environmental as you can be," says Wines. "We, in architecture, are still dominated by early twentieth-century influences. 'Nobody in the visual arts would be caught dead admitting he was a 'cubist,' but mainstream architecture is still trapped in the cubist era."

The Sustainability "Reformation"

The European Commission, jointly with member states and the building industry, in 1999 launched its Action Plan for Sustainable Construction. The plan was developed within the context of COM (97)539, Communication of the Commission on the Competitiveness of the Construction Industry. The purpose of the document was to create a list of priority actions to increase the competitiveness of the European building sector, while, at the same time, taking into account the issue of sustainability. The essential elements of the plan:

- eco-compatible construction materials.
- energy-efficient buildings.
- construction and demolition waste management.

These elements all are part of the Italian tile industry's sustainability "reformation."

Ceramic tiles may justifiably be considered a low environmental-impact material, especially when compared to other floor and wall coverings. This evaluation takes into account the different phases of the entire life-cycle of tiles from the mining of raw materials (the "cradle"), through buildings and coverings, to its final disposal or re-use in the environment (the "grave").

Ceramic tiles are obtained by raw materials widely available in the earth's crust, in particular, clay, feldspar and quartz. They are non-renewable materials, but do not require or justify particularly expensive or environmentally harmful operations of separation or enhancement in the extraction phase.

The emphasis today is on elimination of waste at all levels of the production chain and consumption with an eye toward reduction of impact on the environment and "social equilibrium."

The amount of thermal and electrical energy used to produce a ton of ceramic tiles today is less than half the amount used in the 1970s, though the Italian tile industry has more than doubled its production. Although the production of ceramic tiles is energy intensive—the final stage of production involves heating tiles to a temperature of between 900 degrees C to 1250 degrees C with Fast Firing technology—industry-specific energy consumption was reduced by nearly sixty percent during the 1980s as a result of technological innovation and attention to inefficiencies in production processes.

To achieve that end, the 18 largest ceramic tile manufacturers and largest volume energy consumers in Italy's ceramic district in Sassuolo, Modena, outside of Bologna, have hired an energy manager whose role is the oversight of all manufacturing processes. Among the recent innovations are these: the recovery and use of heat emissions from production plants, increased reliance upon cogeneration and the creation of a database of industry energy consumption.

About 30 Italian tile production plants now take advantage of cogeneration, which augments efficiency in electrical and heat production while, at the same time, reducing emissions. Despite the twofold increase in production, carbon dioxide emissions remain at 1980s levels, Italian tile manufacturers say.

Italy's ceramic district also has made a significant investment over the past 10 years in an effort to substantially reduce water consumption. District plants, almost without exception, now reuse, either directly or indirectly, all wastewater and all production and depuration fragments, saving both water and raw materials. Plants outside Sassuolo and Scandiano, with a potential water demand of nearly 8.1 million m3 per year, are limited to 4.3 million m3 and derive the balance of their needs through reuse.



Hôpital de Jolimont, La Louvière, Belgium / Atelier d'Architecture DDV, Nivelles

Ceramic company water demand remains fairly high and ranges, depending on the technology cycle used and on the different types of product, from a minimum of 8-18 m³/1000 m² for ceramic tiles produced with a double-firing cycle to a maximum of 800 m³/1000 m² for the polishing phase. Current water recycling practices have lowered water consumption from a minimum of 2-6 m³/1000 m² for to a maximum of 7-15 m³/1000 m² for polished porcelain stoneware.

A program of waste minimization, based upon a new mandate of “process and resource efficiency” begins at quarry sites and is carried through the manufacturing process. Potentially toxic materials which have been part of the historical manufacturing process, like lead and cadmium, which traditionally was used in glazing, have been abandoned in favor of substitute materials less harmful to the environment.

Unlike other production sectors, the ceramic industry, and especially the tile industry, is able to recycle and “digest” the greater part of the waste it produces—even tile fragments and dust. Tile dust is separated from gaseous emissions in separation devices known as “depurators,” as is waste produced in the water treatment process. Manufacturing plants now reuse virtually all of their production waste and fragments, saving considerable quantities of raw materials and avoiding large-scale waste disposal.

What is known as The Sustainability Progress Report of 1998 paints an informative picture of the recycling and reuse flows of plant production waste in the Sassuolo/Scandiano tile district. So-called “raw waste” that in 1997 was on the order of 719 kg waste/1000m³ of product was entirely reused within the plant or by at other production sites. Four of five plants now reuse “scrap-fired tiles.” Some waste finds usefulness as a stabilizing agent for road foundations. Inert waste from building demolition is often reused in the same way.

Slaked lime depuration is the most difficult waste to reuse. Three out of five plants in the Sassuolo/Scandiano district still send slaked lime wastes to dump sites. Liquid sludge, however, is reused within the originating plant or by other plants in two out of three cases.

“If you look at tile objectively it is still a fire-based material,” says Wines. “It takes a lot of energy to produce, and a lot of energy to transport it. Its greatest ecological value is that it lasts forever. In Sicily, we see tile floors that are almost 2,000 years old and they look almost new.”



Piazza San Gimignano / San Gimignano, Italy



Reuters, New York, NY / Swanke Hayden Connell Architects

Characterizing Tile

Ente Nazionale Italiano di Unificazione (UNI EN), Italy's standards organization, regulates a wide range of products with very different uses. It divides tiles into eight groups, depending on their water absorption and shaping of the backing method. It also provides a design guide to determine which materials may best be used in varying situations.

In general, ceramic tiles are unsurpassed by any other finishing material because of the following characteristics:

- Ease of maintenance.
- Mechanical resistance and resistance to load, shock, deflection, erosion and scratching. Ceramic tiles' mechanical properties and the outstanding surface performances of vitreous glazing make them a highly attractive material in a variety of situations.
- Impermeability to liquids and resistance to chemical substances. The UNI EN classification provides a measure of porosity and resistance to stains (and chemical agents, in general).
- Fire resistance.
- Resistance to thermal shocks and temperature changes. Varying characteristics are obtained through shaping and through advanced glazing techniques, enabling ceramic tiles to adhere even where there is dampness or other external factors.
- Durability and stability over time: architects and designers use ceramic and glazed ceramic porcelain tiles to meet any technical or aesthetic exigency, knowing the surface will not degrade. In comparison to other finishing materials, tiles have excellent resistance to light and maintain their color for a comparatively long period. Moreover, they can undergo heavy cleaning without being damaged.
- Salubrity: dusts, odors, smoke, germs, pollens do not penetrate the glazing. Moreover, dust does not generally accumulate on ceramic tiles, making them low maintenance.
- Anti slip.

Tile quality is indicated by technical values printed in catalogues and on boxes. These values are the result of tests carried out according to the UNI EN European standards. By evaluating tiles at the outset according to classifications, designers may avoid unpleasant surprises as the job unfolds:

- PEI numbers indicate the resistance to erosion of glazed tiles. Tiles are classified in values ranging from 1 to 5, one being the lowest resistance, 5 the most highly resistant.
- Classes 1,2,3,4,5 characterize stain resistance. Class 5 is the most highly stain resistant. In general, Class 5 tiles may be cleaned with warm water, Class 4 tiles may require a soft detergent and Class 3 tiles may require strong mechanical cleaning or chemical action to eliminate stains. Restoration of Class 2 tiles may require a solvent bath, and Class 1 tiles may not be recoverable.
- Classes A,B,C and D indicate the resistance of the tile to the action of strong acids and cleaning products. "A" is the most highly resistant; "D," the least.

Confronting "Sick Building Syndrome"

It is widely known that the problem of building contamination is a chief cause of so-called "sick building syndrome" and is responsible for many allergies and pathologies. Toxic or harmful substances—like dust, pollens, spores and bacteria as well as pathogenic germs and bacilli—can be brought indoors by building materials and furnishings, or may be blown in from outdoors.

U.S. Environmental Protection Agency (EPA) studies of human exposure to air pollutants indicate that indoor levels of pollutants may be 2-5 times, and occasionally more than 100 times, higher than outdoor levels. These levels of indoor air pollutants may be of particular concern because most people spend about 90 percent of their time indoors.

Modern buildings clearly have a problem in providing a healthy or even appropriate indoor environment. The EPA concedes that about 30 percent of new or renovated buildings have serious indoor air quality problems (IAQ), and ranks IAQ as the nation's most prominent environmental problem.

In its 1999 Guidelines for Air Pollution Control (revised September 2000), the World Health Organization underlined the concerns of the EPA, noting that indoor air pollution is the primary cause in as many as 50 million cases of occupational chronic respiratory disease each year, accounting for one-third of all occupational illnesses.

There are several design strategies that can be used to deliver good indoor air quality.

Controlled ventilation, properly considered design, and the use of healthy building materials can provide good indoor air quality if used as part of a holistic approach.

Among materials available to designers today, those best described as low-emitting are preferred. Ceramic materials, being chemically and physically inert as a result of their high temperature thermal treatment at the end of the manufacturing cycle, outperform every alternative in avoiding contaminating substance emissions.



Parco Delle Querce, Crispano, Italy / Martino Colucci with Cosimo Petronella

Whatever the chemical composition of the tile surface or, in the case of glazed tiles, the glazing, the structural properties of ceramics resulting from the firing process prevent any emission or dispersion of metals contained within the tile or glazing. Emissions resulting from adhesives may be eliminated by attentive installation.

By the nature of its construction, carpet retains far more dust and other pathogenic agents than tile. Several research studies have singled out carpet as the responsible agent in a variety of breathing diseases. Some suggest that up to 90 percent of asthma cases in children can be attributed to carpets. Ceramic tiles, with their hard, inert, compact, non-filamentous surface, and resistance to heavy cleaning, have all the features to ensure easy cleaning and effective hygiene, even in environments subject to poor hygiene.

A growing concern in many cold-climate countries is the growing number of studies that link allergies, immune-depression and other illnesses to the amount and type of fungal growth in a building. By avoiding surface coverings where humidity levels are in excess of 80 percent RH, fungal spores, unavoidable in all buildings, will be starved of the moisture they need to survive. Mold growth within the building envelope can also affect health if an interior air barrier is not present. Mold will only grow on ceramic tiles if soap or skin residue remain on their surface.

The Issue of Safety

Safety is one of the essential requisites of the Directive on Building Products (89/106/EC). The characteristics determining the compliance of tiles are two: *fire and slip resistance*.

Exposure to the high temperatures fires potentially reach does not generally damage ceramic materials. A ceramic floor or covering when in contact with flames is not damaged, does not propagate or feed the fire, does not produce or emit toxic substances, gases or vapors of any kind. Where there is a risk of fire, ceramic tiles perform better than most other covering or flooring materials (in particular wood, cork, carpet, vinyl, etc.). Moreover, it has been experimentally proven that, in cases of fire, ceramic coverings provide good protection to the structures they cover, considerably lowering the thermal stresses the structures would otherwise be subject to.

The risk of accidents due to the slipperiness of floors is an issue that until recently had been underestimated, yet is becoming more important. The reasons for this are: the enforcement in several countries of specific measures to prevent such accidents, and the growing public demand for safe products in the home, workplace and public areas. Especially when undergoing intense traffic flows, paving—indoors or outdoors—should be designed to prevent accidents and ensure users of safe conditions. Ceramic tiles respond to that need without compromising other technical or aesthetic issues.

To measure the degree of slip resistance, specific national standards have been established (DM 236 or DIN 18025). To obtain UNI certification, compliance with these standards is necessary. Ceramic tiles, and more particularly porcelain tiles, can be designed with very effective anti-slip surfaces. Certain factors, however, should be taken into account to ensure adequate anti-slip performance in the flooring or walkway surface:

- **Conditions of Use:** bearing in mind the variation in degree of slipperiness according to the wet or dry or dirty conditions, designing an appropriate maintenance regime is crucial to maintaining the original characteristics of the paving under all conditions.
- **Choice of Materials:** decide which is the more appropriate surface finish according to its intended use. In particular, analyze the potential degree of wear-and-tear.
- **Installation:** a well-designed flooring may be seriously compromised—especially in terms of safety—if the installation is not done to the highest standards. Slight, unexpected slopes, a subsiding surface or any imperfections increase the risk of accidents. ■

CLICK FOR ADDITIONAL REQUIRED READING

This article continues online at archrecord.construction.com/resources/conteduc/.

To receive AIA/CES credit, you are required to read this additional text. The quiz questions below include information from this online reading.

To receive a faxed copy of the material, contact Jacqueline Greaves at 1-212-980-1500, e-mail newyork@newyork.ice.it.



AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION Series

LEARNING OBJECTIVES

After reading this article, you should be able to:

- Have a better perspective on the international response to the issue of sustainability.
- Understand the degree of commitment of Italian tile manufacturers to the green building movement.
- Evaluate ceramic tile in terms of durability, stain resistance, etc.

INSTRUCTIONS

Refer to the learning objectives above. Complete the questions below. Go to the self-report form on page 387. Follow the reporting instructions, answer the test questions and submit the form. Or use the Continuing Education self-report form on *Record's* website—archrecord.construction.com—to receive one AIA/CES Learning Unit including one hour of health safety welfare credit.

QUESTIONS

- In Europe, what percentage of energy use is devoted to the “built” environment?
 - 32 percent
 - 69 percent
 - 17 percent
 - 40 percent
- Ceramic tiles are unsurpassed as a finishing material because of which of the following characteristics?
 - Fire resistance
 - Salubrity
 - Sensitivity
 - Impermeability
- In the last few years, the Italian ceramic tile industry has reduced pollutant gas emissions in production processes by more than:
 - 90 percent
 - 17 percent
 - half
 - emission reductions are planned beginning in 2007
- Which grade of tile is most strongly resistant to stains?
 - A
 - B
 - C
 - D
- Which of the following are not a part of the European Commission’s “sustainability” agenda?
 - the reduction of the impact of raw materials extraction on habitats
 - the rational use of resources
 - the reduction of particulates discharges on a scale relative to the GDP
 - the management and recovery of wastewater during production
- Fiber-optic technology has enabled tile walkways that are visible in the dark.
 - true
 - false
- The most difficult waste product of tile production to reuse is
 - calcinate
 - ammonium nitrate
 - slaked lime depurate
 - sludge
- The Italian tile industry has grown more “sustainable” through which of the following:
 - the recovery and use of heat emissions from production plants
 - increased reliance upon hydro-electric power generation
 - the creation of a database of industry energy consumption
 - increased reliance upon cogeneration
- Ceramic materials are chemically and physically inert as a result of their high temperature thermal treatment at the end of the manufacturing cycle.
 - true
 - false
- The three grand prize winning architects in the Ceramic Tiles of Italy Design Competition Award 2004 were:
 - Edward R. Jones
 - David P. Brems
 - William McDonough
 - Bernard Tschumi

ABOUT THE ITALIAN TRADE COMMISSION

The **Ceramic Tile Department** of the **Italian Trade Commission** in New York, in its twenty-fourth year of operation, is the source for up-to-date information on Italian ceramic tiles as well as a major link between Italian manufacturers and the American market.

Information on the Italian ceramic tile market, on Italian manufacturers and their distributors in the U.S. can be easily found by visiting the Italian Trade Commission website: www.italytile.com

This department collaborates closely with the Italian association

Assopiastrelle, which represents Italian Ceramic Tile & Refractory Manufacturers, to provide technical information as well as assistance in locating Italian ceramic tile manufacturers in the United States.

The Italian Trade Commission would like to thank Assopiastrelle (www.italiatiles.com) and the Italian Ceramic Tile Industry for its dedication to Sustainability (S_tiles®) and to their invaluable assistance in preparing this document. For more information, please visit their website dedicated to Sustainability and Ceramic Tiles: www.s-tiles.it.



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All photographs in this section by Miro Zagnoli.



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THE AMERICAN INSTITUTE OF
STEEL CONSTRUCTION, INC. PRESENTS

New tools for specifying architecturally exposed structural steel

CONTINUING EDUCATION



Use the learning objectives below to focus your study as you read **New tools for specifying architecturally exposed structural steel**. To earn one AIA/CES Learning Unit, including one hour of health safety welfare credit, answer the questions on page 327, then follow the reporting instructions on page 388 or go to the Continuing Education section on archrecord.construction.com and follow the reporting instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

- Improve your ability to effectively design, specify, and budget architecturally exposed structural steel.
- Understand the cost and desirability of specific conditions.
- Incorporate specification language agreeable to both designers and specialty steel contractors

While exposed structural steel was once the select province of a few noteworthy projects, architects today are increasingly using transparency in their design. While not a new trend, the use of exposed steel seems to have picked up steam in the last decade—beginning with Helmut Jahn’s United Airlines Terminal in Chicago and continuing with Frank Gehry’s museums and concert halls. But today its not just monumental structures—it’s everything from small retail stores to office lobbies.

Unfortunately, existing codes and standards—even the American Institute of Steel Construction’s Code of Standard Practice—do not fully address the unique level of detail needed to successfully design, detail, fabricate and erect Architecturally Exposed Structural Steel (AESS). Further, because AESS costs more to fabricate than standard structural steel, it is critical that these designs are properly budgeted. The repercussion of not properly budgeting AESS is often the need for redesign, project delays, and ultimately even higher project costs. In addition, the members requiring special handling and finish are often poorly identified in the contract documents—and, since the structural engineer often specifies the steel while the architect specifies the paint and appearance, there is sometimes a built-in conflict or compatibility issue. Finally, the lack of acceptance criteria for AESS members often leads to disputes between the design team and the contractor over what is desired versus what was bid.

In response to these issues, the Steel Liaison Committee of the Structural Engineers Association of Colorado and the Rocky Mountain Steel Construction Association, with input from local contractors and architects, developed guidelines to assist in the specification of AESS. According to the Committee: “The goal of these tools is to allow the designer to communicate the desired appearance in a format that contractors can price/budget/bid more appropriately.”

The guidelines include three key elements (a sample board, cost matrix, and a proposed specification), most of which can be accessed in their entirety and at no charge by visiting www.aisc.org/aess.

“The goal of these tools is to allow the designer to communicate the desired appearance in a format that contractors can price/budget/bid more appropriately.”

Two award-winning examples (pictured here and on page 323) of architecturally exposed structural steel are the University of Oregon's Lillis Business Complex in Eugene, OR, and the Oregon Department of Forestry's new Operations Building in Salem, OR, both of which were designed by SRG Partnership, Inc., Portland, OR. Photos by Rick Keating Photography.



Sample Board

The sample board includes small pieces of fabricated structural steel that indicate a range of finish surfaces that can be expected from structural steel fabricators. The board includes bare steel with fabrication “defects” and pieces with typical finish coats. The samples are intended to allow the designer to see how various fabrication techniques affect the final product. The goal of the sample board is to allow the designer to decide what features are important for their project. Physical samples allow the designer to evaluate how imperfections in the finished surface appear from various distances. (Detailed photographs from the sample board can be viewed by visiting www.aisc.org/aess. However, due to reproduction technology limitations, they are only representational of finished appearances. Fortunately, designers or contractors wishing to obtain an actual sample board can purchase one from Zimkor Industries for \$1,780 by contacting William Zimmerman at wzimmerman@zimkor.com or 303.791.1333.)

Cost Matrix

Of course, knowing the appearance of the final steel is only half the story. Equally important is knowing the budget impact of AESS. The cost matrix is intended to provide the designer with the cost premium associated with specifying the desired techniques to achieve the final appearance of an AESS project. The cost of producing work to a higher appearance standard varies greatly from fabricator to fabricator, depending on the equipment in the shop and the experience of the staff. This variation is indicated in the cost matrix as a range of cost premiums for each desired fabrication technique or finish coat item specified. The cost premiums noted apply to the total weight of AESS for that particular line item, fabricated and erected. While the cost matrix was prepared

initially by surveying fabricators in the Rocky Mountain region, the figures have been further checked through surveying a select group of national fabricators. The idea behind the cost matrix is to allow a designer to balance a project budget with the desired project scope. As a result, several design iterations might be required. Also, it is imperative that a designer contact a local fabricator for more detailed pricing as the project becomes more defined. (The cost matrix can be viewed by visiting www.aisc.org/aess.)

Specification

SEAC/RCSCA has prepared a generic specification that includes many common fabrication and erection techniques to help communicate a designer's expectations to the fabricator. (The entire specification can be downloaded at no charge by visiting www.aisc.org/aess.) The specification includes a number of editor's notes to provide guidance. The headings in the specification are coordinated with the information from the cost matrix and sample board. The intent of the specification is to provide a consistent mechanism to define appearance quality requirements that were selected with the sample board and budgeted with the cost matrix. The primary scope of the project was to offer a common language to address the appearance issues of structural steel used in exposed locations. Although many of the finish issues are common to miscellaneous metals, stairs and railings, the specification is not written to cover all of these items. Furthermore, there are numerous performance topics such as jointing for thermal movements, waterproofing and fire resistance which this document does not address. Any comments or suggestions on how the Specification can be improved or modified should be sent to Jack Petersen at jpetersen@martinmartin.com.

Should I Specify “Welds Ground Smooth”?

A fairly common request on projects with Architectural Exposed Structural Steel is for welds to be ground smooth. But what does that really mean? How do you specify it? And what’s the cost impact?

Specifying “welds ground smooth” has a significant impact on the appearance of steel (see photo), though once you get beyond about 20, the effect is minimized (for example, exposed steel at ground level compared with exposed steel near a roof line). And, as an examination of the sample board reveals, grinding the weld smooth does not always enhance appearance, since the process.

The SEAC/RCSCA sample specification states that the fabricator and/or erector shall grind welds of AECS smooth. For groove welds, the weld shall be made flush to the surfaces each side and be within $\pm 1/16$ th, -0 ” of plate thickness.

It’s important to remember that there may be a significant cost impact associated with grinding welds smooth and it should not be specified indiscriminately. In fact, according to the AECS cost matrix, specifying “welds ground smooth” can add 10%-20% to the fabrication and erection cost. Another consideration is that: “In a standard structural steel frame, the welds are left in an as-welded condition with the slag and weld spatter removed. For AECS frames, the process is the same. Should smooth grinding of the



welds be required, this classification should be specified. It is important to note that in many cases, grinding the weld will leave a blemish that is more obvious than the unground weld.”

What Level of Surface Preparation Should I Specify?

Surface preparation is the most important—and often the most costly—step in providing a good finish on AECS. Unfortunately, it is often misunderstood. A level of surface preparation is associated with each type of finish coat. It is critical that the correct level of preparation be specified on the contract documents to avoid change orders during construction.

Surface preparation is done in accordance with a specification prepared by SSPC: The Society for Protective Coatings, and is indicated by a numerical designation. While the numbers are not sequential, a higher number does include the processes indicated in the levels below (for example, the SSPC-SP 6 specification includes the requirements of SSPC-SP 3).

The sample specification and cost matrix notes provide the following information about surface preparation (see photos for visual information about SSPC-SP 3 and SP 6):

- **SSPC-SP 1 - Solvent Cleaning**
- **SSPC-SP 2 - Hand Tool Cleaning:** (This level of surface preparation will not be adequate for most paint systems for AECS construction.)
- **SSPC-SP 3 - Power Tool Cleaning:** Power tool cleaning removes all loose mill scale, loose rust, loose paint and other loose detrimental foreign matter using power tools. This process requires that Solvent Cleaning (SSPC-SP 1) be performed prior. It is not intended that adherent mill scale, rust and paint be removed by this process. Mill scale, rust and paint are considered adherent if they cannot be removed by lifting with a dull putty knife. (This level of surface prep is the minimum for most AECS projects. It may be acceptable for alkyd primers and acrylic or alkyd finish coats, particularly in interior applications.)
- **SSPC-SP 6 - Commercial Blast Cleaning:** A commercial blast-cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dust, dirt, mill scale, rust, coating, oxides, corrosion products, and other foreign matter. (This level of surface prep adds significantly to the total cost of the steel. It is required for epoxy primers to allow adequate bonding to the steel. Recommended for locations where a rust inhibitive primer will be used in an exterior application. It is also required where polyurethane finish coats will be used over the primer.)

Regardless of the level of surface preparation specified, the result will not resemble the hood of a new automobile. It’s critical to look at the sample board (or the photos available at www.aisc.org/aess) to get a true feel for the results of the surface preparation specified.



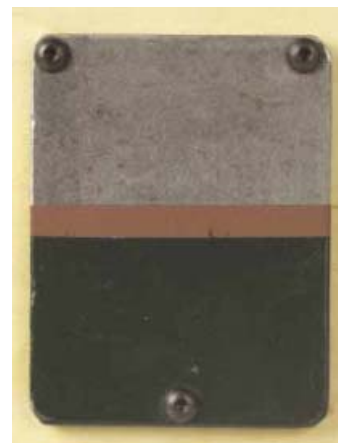
Finish A SSPC3

Low-end primer/finish coating: alkyd (oil-base) finish coat with a shop-coat primer over an SSPC-3 surface preparation.



Finish B SSPC3

High-end primer/finish coating: epoxy finish coat with an epoxy finish coat with an epoxy or zinc-rich primer, over an SSPC-3 surface preparation.



Finish C SSPC6

Low-end primer/finish coating: acrylic (water-based) finish coat with a shop coat primer over an SSPC-6 surface preparation.



Finish D SSPC6

High-end primer/finish coating: polyurethane finish coat with an epoxy intermediate coat and zinc-rich primer over an SSPC-6 surface preparation.



What Types of Coatings Should be Used with AESS?

There have been notable improvements in coating technology during the last decade and today's systems offer long life with improved environmental performance. However, it's critical that the specified primer be coordinated with the finish coat system to ensure coating compatibility.

Alkyds

PRIMER: Typically referred to as shop-coat primer, this product can come in many different levels of quality depending on the level of corrosion protection required. They are fast drying, enabling the fabricator to quickly deliver product to the job site. Standard alkyd primers can be finish-coated with an alkyd or water-based enamel. Universal alkyd primers can be used under high-performance coatings such as epoxies or urethanes. In general, for exterior exposure, a high-quality, universal, rust-inhibitive zinc-rich primer should be used. The increase in cost over a standard shop-coat primer is on the order of \$5.00 to \$10.00 per gallon. The material cost of the paint represents a small portion of the total painting cost, while the higher quality provides greater corrosion protection to the steel.

FINISH: Alkyds are an acceptable finish coat for interior applications and some exterior application and they dry to a hard durable finish. When specified for exterior use, alkyds will chalk and fade with UV exposure in a relatively short period. Alkyds can be brush, roll, or spray applied.

Acrylic

Acrylic primers are corrosion resistant and water-soluble, often providing a lower VOC. They are available in shop-coat quality up to a universal primer for use under high performance coatings such as epoxies and urethanes.

Acrylics are an acceptable finish coat for both interior and exterior service. Acrylics provide good color and gloss retention under UV exposure. They can be easily applied by brush, roller, or spray and offer low odor and VOC for interior application.

EPOXY PRIMER: Epoxy primers provide excellent corrosion protection for steel and can be top-coated with a variety of finishes. Epoxy primers can be applied in the shop and typically have a high film build that will hide minor imperfections.

ZINC-RICH PRIMER: Zinc-rich primer provides superior corrosion protection by providing cathodic protection to the steel. Zinc-rich coatings can be specified as either organic zinc or inorganic zinc. Both inorganic and organic will meet class B slip coefficients for bolted connections. In arid regions (such as the Rocky Mountain Region) organic epoxy/zinc primers should be specified, as they do not rely on an outside source (humidity) for cure. Inorganic zinc is often the preferred primer because it can be handled right away. However, it requires a constant humidity of no less than 40% RH for proper cure. If an intermediate and finish coat are to be completed in the shop, the lack of humidity can cause delays in both the painting process and project as the zinc must be cured prior to top-coating. Alkyd finish coats should not be specified over zinc primers. For galvanizing repair, an organic zinc with not less than 90% zinc by weight in the dry film should be used for re-galvanizing welds and damage due to erection.

Epoxy finish coats can be applied as a finish for interior use where abrasion resistance is required. The high-build nature of film can help cover imperfections in the steel; however, they will chalk and fade with UV exposure.

When possible, finish coating should be done in the field after erection. Finish coats applied in the shop almost always incur damage from handling in shipping and erection. This often results in applying an additional finish coat in the field or completing costly touch-up which often does not blend in with the original finish. Additionally, if finish painting is to be done prior to delivery of the steel, special sections should be added to ensure proper handling and minimize damage.

Click for Additional Required Reading

As part of this CES learning activity, you are required to read additional materials. Some of the test questions below will relate to the additional reading material. Go to archrecord.construction.com/CONTEDUC/Conteduc.asp to access the material online.

To obtain a faxed copy of the materials, contact the Steel Solutions Center at (312) 670-5420 or email pascoli@aisc.org.



AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION Series

LEARNING OBJECTIVES

After reading this article, you should be able to:

- *Improve your ability to effectively design, specify, and budget architecturally exposed structural steel.*
- *Understand the cost and desirability of specific conditions.*
- *Incorporate specification language agreeable to both designers and specialty steel contractors*

INSTRUCTIONS

Refer to the learning objectives above. Complete the questions below. Go to the self-report form on page 388. Follow the reporting instructions, answer the test questions and submit the form. Or use the Continuing Education self-report form on *Record's* website—archrecord.construction.com—to receive one AIA/CES Learning Unit including one hour of health safety welfare credit.

QUESTIONS

1. AISC's Code of Standard Practice fully addresses the unique level of detail needed to successfully design, detail, fabricate and erect AESS.
 - a. true
 - b. false
2. Simply specifying "AESS" in your project specifications will give you which of the following treatments?
 - a. field welding aids removed
 - b. joint gap tolerances minimized
 - c. welds ground smooth
 - d. all of the above
3. If you simply specify "AESS" on your drawings without further detailed specification, what is the expected range of cost increase?
 - a. 10–20%
 - b. 27–60%
 - c. 42–90%
 - d. More than double
4. Grinding the weld will almost always improve the weld's appearance and will minimize any blemishes.
 - a. true
 - b. false
5. What is the minimum acceptable surface preparation for AESS applications?
 - a. SSPC-SP 1 - Solvent Cleaning
 - b. SSPC-SP 2 - Hand Tool Cleaning
 - c. SSPC-SP 3 - Power Tool Cleaning
 - d. SSPC-SP 6 - Commercial Blast Cleaning
6. When possible, finish coating should be done in the field after erection.
 - a. true
 - b. false
7. Which of the following is NOT critical in obtaining the architectural appearance desired at the best budget for an AESS project?
 - a. specifying an SSPC-SP10 "Near White Blast" surface preparation
 - b. having a pre-installation conference
 - c. obtaining a mock-up of the treatments specified
 - d. showing which members require AESS treatment in contract documents
8. Which of the following is NOT a special fabrication method that may impact the final appearance of the AESS?
 - a. contouring and blending of welds
 - b. maintaining a uniform joint gap of $1/8"$ $\pm 1/32"$
 - c. mill mark removal
 - d. turn of the nut method
9. Which of the following is NOT a special erection issue that may impact the final appearance of the AESS?
 - a. welds ground smooth
 - b. bolt head orientation
 - c. removal of field connection aids
 - d. pre-qualified field erection plan
10. What is the most important step in providing a good finish on AESS?
 - a. surface preparation
 - b. welds ground smooth
 - c. grinding of sheared edges
 - d. mill mark removal

About The American Institute of Steel Construction (AISC)

The American Institute of Steel Construction provides specifications and technical information that makes the design and construction of structural steel easier and more economical. As part of that goal, AISC is providing information

on Architecturally Exposed Structural Steel developed by the Steel Liaison Committee of the Structural Engineers Association of Colorado and the Rocky Mountain Steel Construction Association.



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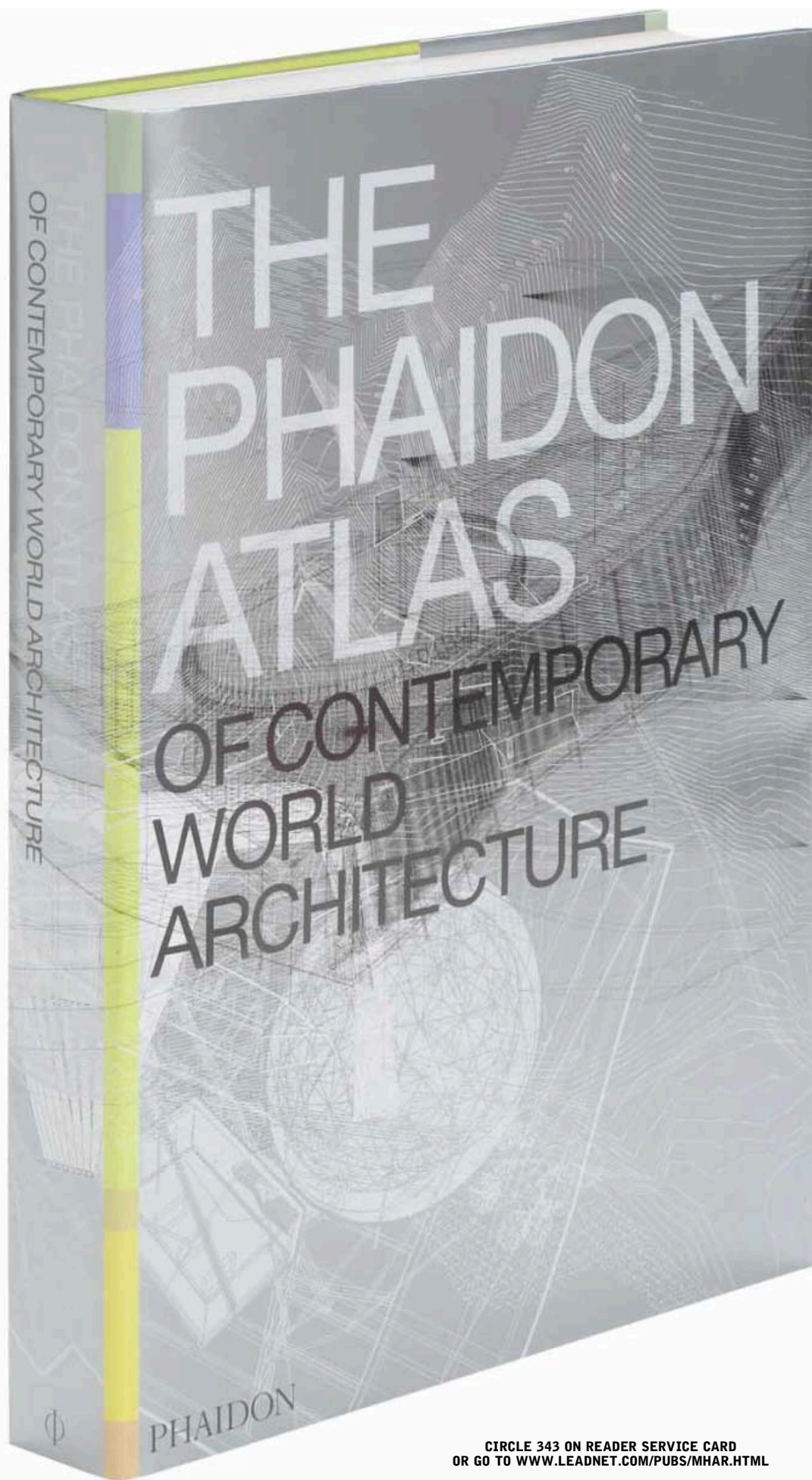


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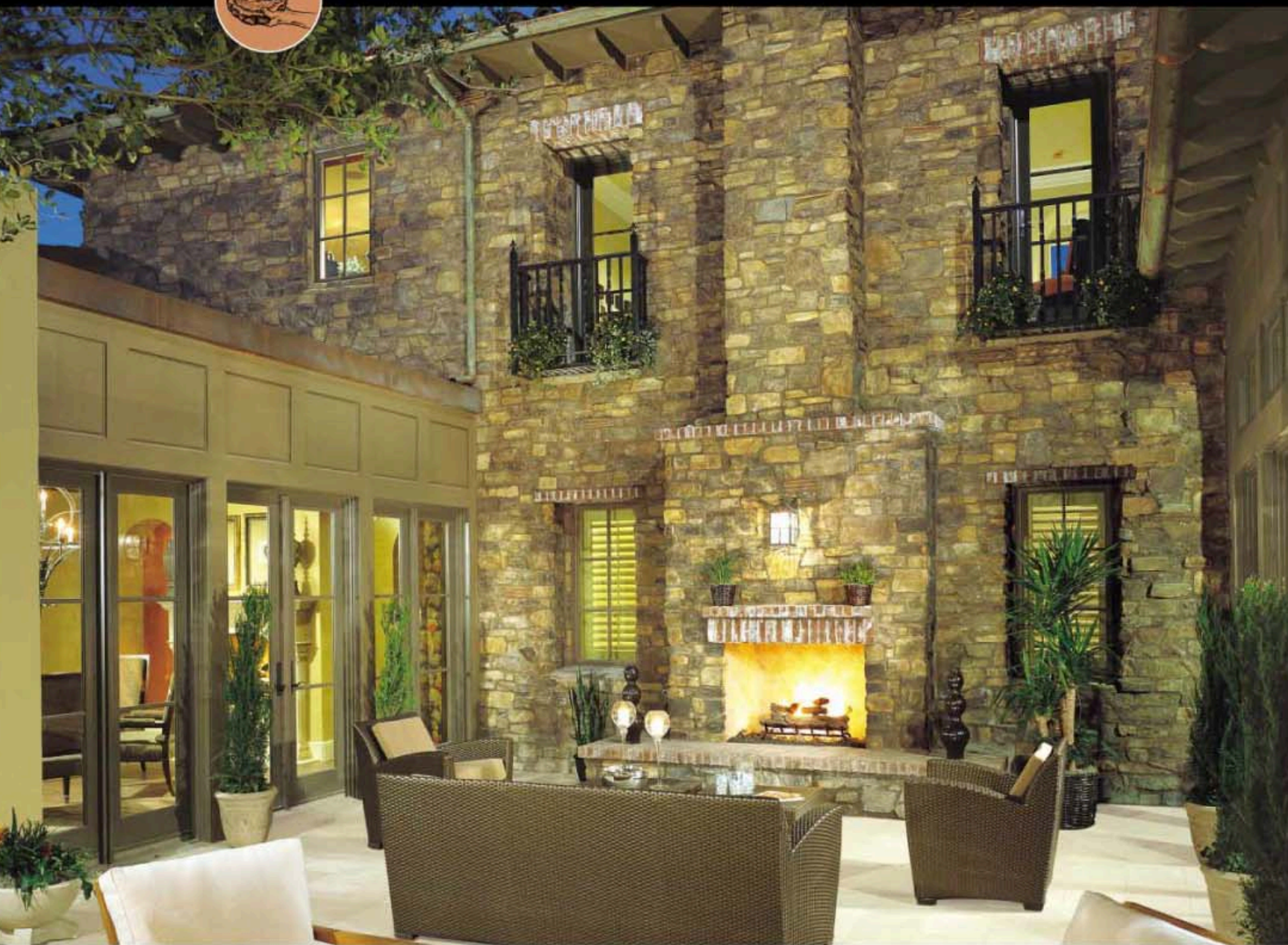
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Interiors

“Secretarial corridors” may have gone the way of the typewriter, but some offices look back to move forward

BRIEFS

French designer Charlotte Perriand is frequently mentioned as one of the most overlooked Modernist design talents of the 20th century. A long-time collaborator with Le Corbusier, Pierre Jeanneret, and Jean Prouvé, she worked for more than six decades perfecting tubular-style furniture that came to be known as “equipment for living.” (She died in 1999 at age 96.) The **Princeton University Art Museum** spotlights her best work in a major exhibition, *Useful Forms: Furniture by Charlotte Perriand*, on view through July 11. Works in the show include a rare library table designed for the Maison de l’Etudiant in Paris and a free-form desk from 1960. Go to www.princetonartmuseum.org. W.W.

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A sign of the times, circa 1968: “Although the secretarial pools and the open work areas are both accepted principles in office planning,” wrote author Michael Saphier, “on occasion it is necessary to provide partial privacy for some secretaries.” This text, from a McGraw-Hill book published that year, *Office Planning and Design* (below), accompanied a photo in which secretaries and their bland desks were placed in a corridor and shielded behind 3-foot-wide, floor-to-ceiling sections of drywall, an arrangement that likely would not be considered congenial or productive today. (And don’t support-staff personnel prefer the title of executive assistant these days?)

On the plus side, some of the book’s tenets regarding office organization seem to hold up even 36 years later. And among the featured projects that were more progressive than the “secretarial corridor” was a private office’s “roll-top room” that employed hinged doors powered by a

garage-door mechanism to hide a research area. The automation was primitive, but the solution foretold today’s continuing search for flexibility of form and a balance of private and public zones.

Among the offices we present this month, most look back to earlier times for inspiration. San Francisco-based Huntsman Architectural Group settled on Arne Jacobsen’s Egg chair as an iconic touchstone for reinterpreting elements of midcentury Modernism for its own offices. Its colorful (dare we say, almost mod?) materials library, with Verner Panton chairs (above), doubles as a space available to community charities. Johnson Chou’s conference room at Grip in Toronto is an illuminated “bubble” that evokes the sci-fi optimism of ’60s space travel. Guillermo M. Gomez adopts

a Mondrian-like palette for the office of a Broadway ad agency. Looking farther into the past, Traboscia Roiatti meditated on a vintage Veuve Clicquot champagne bottle, its shapely curves and orange label cuing abstract forms for a modern loft office. Times have changed, but the search for connections to shared history has not. *William Weathersby, Jr.*



Broadway advertising campaigns are projected on one wall of the EMG reception area as a focal point. Downlights create a play of color along the luminescent flooring, while red chairs rest against a glass wall.



Guillermo M. Gomez orchestrates color and flexibility for the Broadway advertising agency Eliran Murphy Group

By William Weathersby, Jr.

They say the neon lights are bright on Broadway," so the popular song goes. For the New York City-based media firm Eliran Murphy Group (EMG), whose business is designing advertisements and branding campaigns that help to make hits of Broadway shows like *Nine* and *Cabaret*, bright lights, bold colors, and exuberant flashes of creativity are its stock-in-trade. To present the agency's strong suit of design talent and marketing finesse within a new office near the theater crossroads of Times Square, Guillermo M. Gomez Architect (GGA) orchestrated a modern, energetic office that trumpets a striking new corporate identity.

"From the start, it was very clear what our business was and what our goals for the new office were," says EMG president/creative director Ann Murphy. "We wanted our architect to become involved from the very beginning, to bring in his ideas and listen to ours so we could work together to make the relocation project a success."

To foster a collaborative working relationship, Murphy and EMG C.E.O. Barbara Eliran enlisted GGA principal architect Guillermo Gomez to assist in scouting potential offices for the relocation from several overtaxed floors in midtown. Together they discovered a 10,000-square-foot, fifth-floor space in a prewar building just south of the theater

district that offered the most potential for programming and design within a modest budget of \$59 per square foot. "The clients sought a design that would spark day-to-day operations by emphasizing light, height, and quality of space, kept within affordable relocation and construction costs," Gomez says.

Besides its Broadway mainstays, EMG also designs media campaigns and materials for New York arts institutions such as City Opera and the American Museum of Natural History, as well as television industry players like PBS/Channel 13. Rather than go over the top with theatrical razzle-dazzle for the office, Gomez delivered the desired high-end visual appeal via inventive, cost-effective design solutions.

At the entry, the architect expanded the elevator lobby and created a view into the reception area with a frameless, acid-etched glass wall sandblasted with the company's logo. Beyond the glass wall, a com-

Project: *Eliran Murphy Group, New York City*

project designer

Architect: *Guillermo M. Gomez Architect—Guillermo M. Gomez, principal architect; Luciano Rennis,*

Contractor: *Certified of New York*

Audiovisual consultant: *Ruppert Bohle*





Private offices along the perimeter are enclosed by acid-etched glass walls and doors, which filter

light through to the central core (above). Bands of clear glass offer employees better sight lines (right).

position of intersecting. Minimalist planes enclosing various zones creates a strong first impression. The same acid-etched glass tops a 6.5-foot-long reception desk set on the diagonal. Luminescent flooring with a pattern of repeating circles shifts from gray to green, silver, and gold, depending on the angle of light cast by ceiling-recessed light fixtures and the position of pedestrians. The agency's work, including television commercials for Tony-winning musicals, is projected against a side wall within view of reception seating, a cluster of Ron Arad's red Tom Vac chairs. "The clients originally planned to show their work on a flat-screen monitor, but we proposed a projector to make the images larger and more theatrical as a focal point for their clients and guests," Gomez explains.

In the main open-office area for creative teams, Gomez simplified the plan by demolishing an existing maze of enclosed offices, raising the ceiling, and opening the central core to accommodate 10 custom workstations. The partial enclosures are constructed of drywall painted in a Mondrian-inspired palette of red, yellow, and orange. Constructing desks, rather than purchasing a modular furniture system, allowed EMG to reuse undercounter filing cabinets and other support units, now painted black to recede from view. Partitions of translucent acrylic are mounted directly onto the drywall in random configurations so no two



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Galvanized-steel pipes convey power cables to workstations (above left and right). Left unfinished and exposed, they join laminated-wood shel-

ing cubes, white plastic laminate desktops, translucent acrylic panels, and colorful, painted partitions as an office kit of parts (above and below).



workstations are the same. Linear fluorescents inset atop some of the partitions enhance ambient uplighting. White laminate desktops and laminated plywood shelving are affordable, attractive contrasts to the color-splashed walls. Galvanized-steel pipes, which run power cables from the ceiling and walls to each desk, were left exposed to enhance the kit-of-parts look. The network of perpendicular colored walls also doubles as a gallery showcase for EMG's colorful posters and advertising artwork.

Private offices for art directors, account managers, and executives rim the perimeter, enclosed by acid-etched glass walls that allow daylight into the open-office core. A clear horizontal band runs through the translucent panels at the eye level of employees seated at their desks.

One client, the musical *The Thing About Men*, incorporated a projection of the EMG office into its production. "They wanted a visual image of a cutting-edge ad agency," Gomez says, "and said this fit the bill." It's a favorable review for GGA's design, an office for a key creative concern that improves the bottom line of show business. ■

Sources

Workstation laminates: Formica Corporation

Luminous panels: Lumicore Acrylics

Flooring: Chilewich, through Architectural Flooring Research

Ceilings: U.S. Gypsum

Door hardware: Blumcraft

Glazing: Zecca Mirror & Glass

Signage: Certified Graphics

Lighting: Lightolier

Reception chairs: Vitra

Cabinetry: Certified of New York

Paint: Benjamin Moore

For more information on this project, go to Projects at

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A custom-designed screen separates a breakout room and informal meeting area from the main corridor (above). The screen,

which rotates and snaps into place with a gentle push, is made of unstained domestic walnut that frames woven paper rush (left).

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Huntsman Architectural Group in San Francisco designs its office as a study in relaxed Modern style

By Andrew Blum

The Barcelona chair designed by Mies van der Rohe is the mezuzah of American architecture firms, installed by the front door as a symbol of devotion to the tribe of Modernism. As a result, it has become a design-office cliché, a placeholder, a choice that is no choice at all. It is a pleasant surprise, then, to find it missing from the lobby of the new San Francisco quarters of Huntsman Architectural Group, replaced by a trio of Egg chairs, a lesser-known but still classic icon by midcentury Danish designer Arne Jacobsen. It is telling, too, because the robin's-egg-blue chairs also signal a devotion to high design, yet they convey warmth, comfort, and the atmosphere of hospitality that envelops each area of this clean-lined office.

"Clients will come in for a meeting, and they are often very comfortable just sitting in one of the reception-area Jacobsen chairs," notes Mark Harbick, AIA, Huntsman principal and lead designer for the office project. Clients may stretch out in public areas here, but not for want of other space. The 20,000-square-foot office on the seventh floor of a generic 1960s-era downtown building is designed to be accommodating not only to Huntsman's practice but to the local community. The firm typically hosts large holiday parties and other social functions, frequently lends its office to nonprofit organizations for benefits, and encourages clients (particularly those from out of town) to stop by, plug in a laptop, and help themselves to coffee in the kitchen. And nearly one third of the space accommodating the staff of 70 is skewed to "public" rooms that strike notes of openness and crisp informality.

The Huntsman practice moved to this location from offices scattered over several floors in a nearby historic building designed by architect Julia Morgan. Founded in 1981, when Daniel Huntsman left Gensler, the firm focuses primarily on designing architectural interiors in the San Francisco Bay area. After years of ad hoc growth, Huntsman saw this move as a chance to clean its own slate and start afresh. "It was time to design an office that better reflected our personality and expressed some of the cultural elements that make us different," Harbick says, sitting on a sofa in the living-roomlike lounge off the boardroom. Other project mandates were an inexpensive construction budget, experimentation with Modern forms, and the use of sustainable materials.

While the partners signed off on most decisions, key philo-

Andrew Blum is a freelance writer based in San Francisco. He is a regular contributor to ARCHITECTURAL RECORD and The New York Times.

Project: Huntsman Architectural Group, San Francisco

Architect: Huntsman Architectural Group—Daniel Huntsman, principal in charge; Mark Harbick, AIA, design principal; Keith Turner, Aaron Vinson, project managers; Fritz

Muegenburg, Alison Smith, James Reid, Nick Modroo, design team

Consultants: Randall Lamb/Capitol Electric (electrical); GFDS Engineers (structural); Charles M. Salter Associates (acoustical)

Contractor: Turner Construction



The walnut reception desk is topped by plywood turned on end and laminated. The charcoal mosaic is part of the graphic identity.



The long credenza in the conference room doubles as a buffet and extra seating (above).

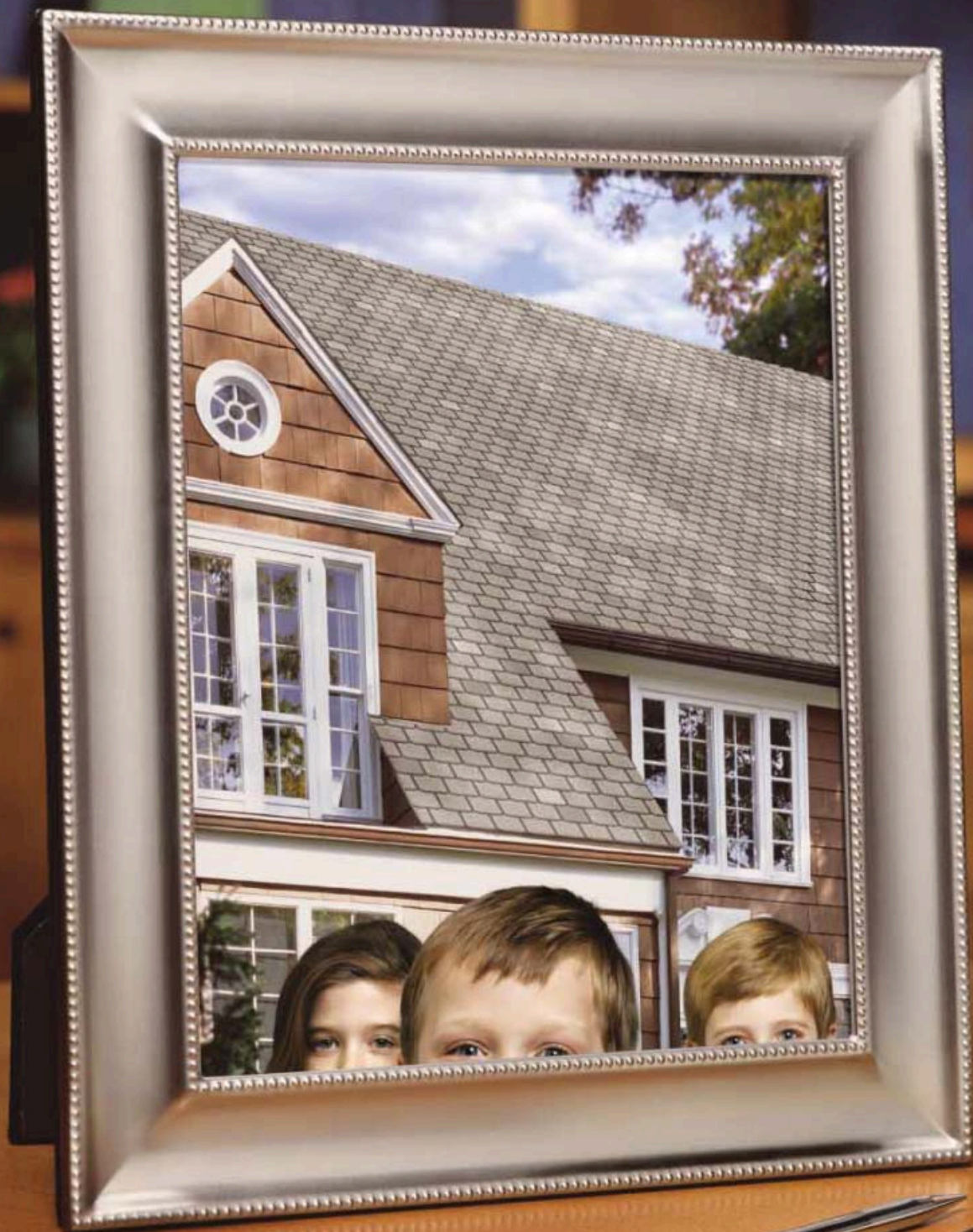
Jacobsen's Egg chairs impart a Modern yet casual feeling in the reception area (below).



sophical ideas were put to the firm as a whole in an attempt to democratically capture its corporate personality.

For example, the library in the old offices was beloved, but invariably a mess. “We got so busy and crowded,” Harbick says, “when we ran out of conference rooms we would schlep our clients back into the library, and as soon as they got there their eyes got big—they just loved to see where it all happens.” But would a library area work as the focal point of the new space? The issue was resolved at an “all-hands” meeting. The library now links the public rooms along the main circulation corridor with a single large studio in the back. Raising the 8-foot ceilings of the library to 12 feet balanced the size of the room and illustrated for clients Huntsman’s philosophy of using its office as a combination lab and showroom. (Similarly, the dropped ceiling in the studio has a 6-inch gap to demonstrate the “inner workings” of the infrastructure above.) The proximity of the library to the boardroom means clients can sometimes be found riffling through sample catalogs on their own. The room’s flexible tables also make it the area most frequently used by outside groups—most recently, Pets Are Wonderful Support (PAWS), a San Francisco

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charity that helps people with HIV/AIDS care for their pets.

Huntsman has engaged its office as a “beta testing” site for mock-ups of new furniture and interior products manufactured by companies that include Herman Miller and Peerless Lighting. (The mesh backs of Eames swivel chairs were “road tested” in the conference room.) Serving as a marketing tool and calling card, the office has aided the firm in acquiring new clients, some of whom first became aware of Huntsman while touring the office to see its on-site installations at the invitation of manufacturer representatives, Harbick reports.

One room that captures the form-and-function spirit of the office is the open kitchen, where clients help themselves to coffee, and snacks and wine are served on Friday afternoons. An island is topped by plywood turned on its side and laminated, while the counter is covered in linoleum—inexpensive, strong, and sustainable. When the manufacturer of the latter material refused to warrant it for use on any surface but the floor, Harbick decided to experiment with it anyway. Becoming your own client, he notes, can lead to a windfall of new design solutions. ■

Sources

Wood flooring: Junkers

Carpeting: Prince Street; Interface

Mosaic wall tile: Bisazza

Ceilings: Armstrong

Wall panel system: Fabrictrak

Lighting: Peerless Lighting; ERCO; RSA; Bella Shades; Selux; Artemide

Furniture: Knoll; Herman Miller;

Sloan Miyasato; Vecta; Steelcase;

Cassina; Nienkamper; Mayline;

Design Within Reach

Fabrics: Carnegie; Designtex;

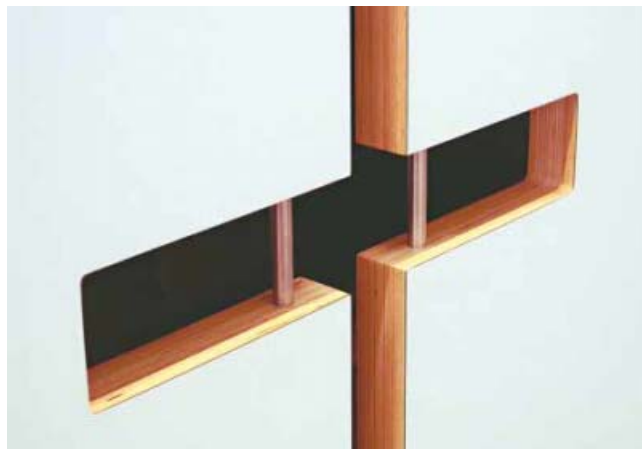
Maharam; Jack Lenor Larsen; Pollack

For more information on this project, go to Projects at

www.architecturalrecord.com.



Huntsman employees applied colored fabric randomly to open-plan office panels for a sense of informality (above). A credenza's sliding wood top covers recycling bins (left). Cutouts in doors along a corridor create sleek handles without heavy hardware (below).



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Traboscia Roiatti introduces a modern point of view to the offices of French vintner Clicquot in New York City

By William Weathersby, Jr.

Veuve Clicquot, which translated from the French means “Widow Clicquot,” is the premium champagne and parent company named after the extraordinary woman who was a trailblazing entrepreneur in 19th-century France. Widowed at age 28 in 1805, Madame Clicquot took the reigns of her family business and over six decades built a premium brand, exporting champagne to Russia and America, among other precedent-setting destinations. Today, the international bottler and distributor has an expanded portfolio reaching beyond France’s Champagne district to include wines from the Marlborough region of New Zealand and vineyards in the Pacific Northwest.

Clicquot, Inc., the U.S. subsidiary, is helmed by president and C.E.O. Mireille Guiliano, a woman on whom the tenacious legacy of Madame Clicquot is not lost. When scouting for space to house a new headquarters in Manhattan, Guiliano says she sought a location and interior style that were less traditional than the company’s previous Midtown offices and more in line with its current spirit of modernity and global trade. “In the 1980s and ’90s, the

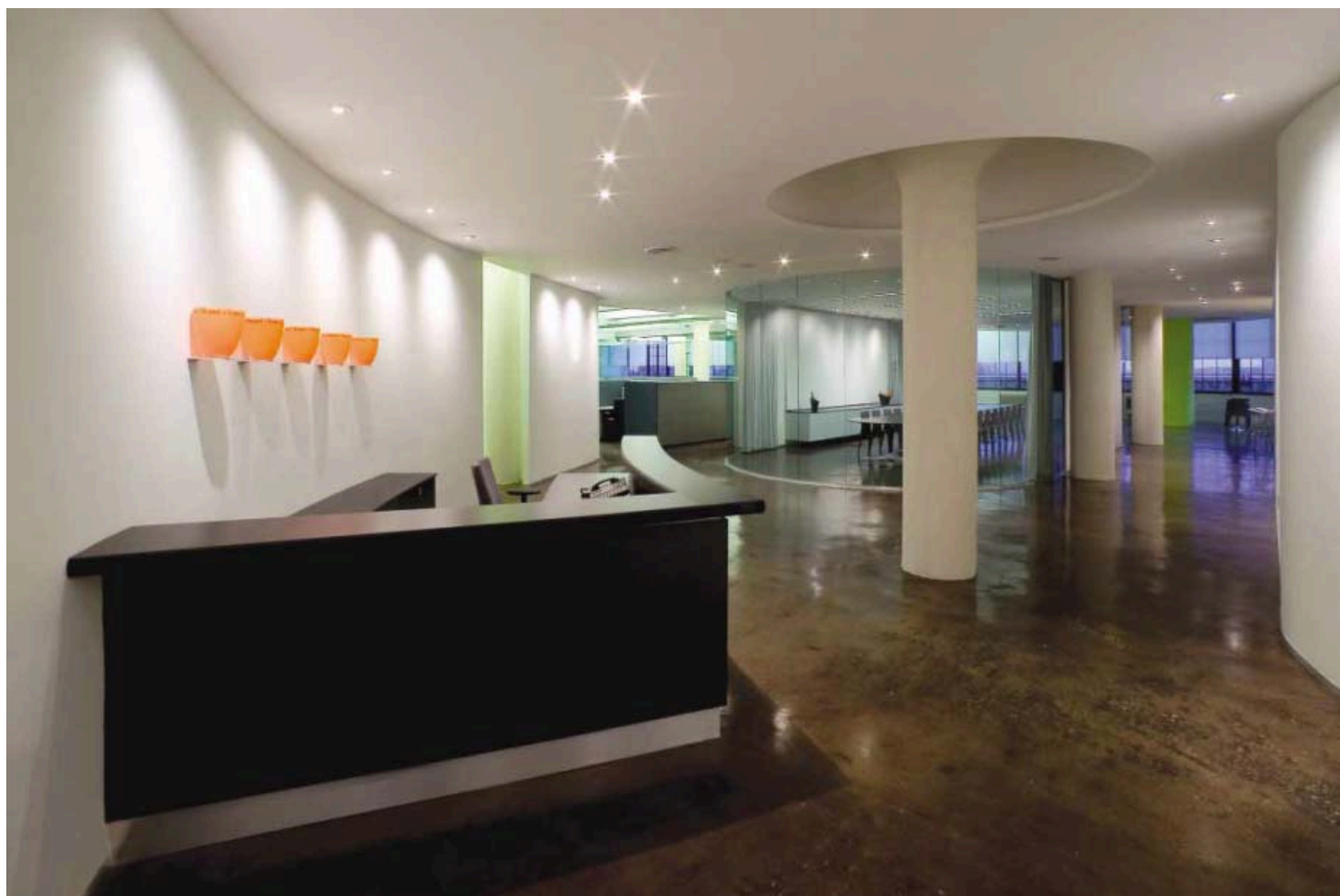
The curving forms and orange accents at Clicquot, Inc. (below) were inspired by the vintner’s champagne bottles (right).

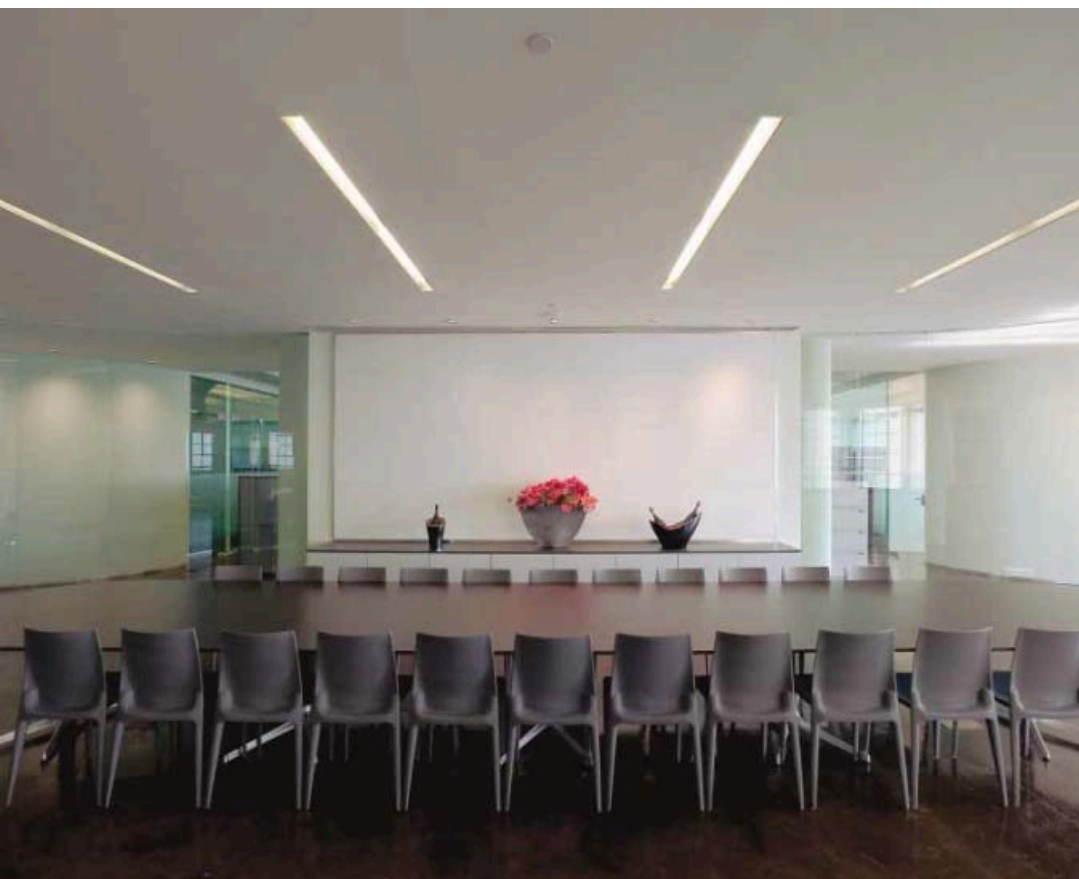


conventional place for a luxury company to be was on Fifth Avenue,” Guiliano says. “It was time for us to move on from our location there, and we wanted to be where the action is.”

Working with architects Traboscia Roiatti, Clicquot secured a 13,500-square-foot space in the Chelsea neighborhood’s Starrett Lehigh Building, an address that could not be more *au courant*. Converted several years ago for office use, the circa 1931 former railroad depot houses high-end fashion and lifestyle tenants, including

Assouline, Hugo Boss, and Martha Stewart Omnimedia, plus a roster of commercial art galleries and photo studios. Clicquot also uses its office as a venue for entertaining clients, so the location’s dealmaking attraction was an adjoining 4,000-square-foot terrace with two exposures framing views of the Hudson River, the Statue of Liberty, and Midtown landmarks such as the Empire State Building.







Though their colleagues in France typically work in pastoral châteaux or city town houses lined with rich wood paneling and antique furnishings, Clicquot's New York executives envisioned an office that was "contemporary, open, and light," says principal architect Robert Traboscia. The 15th-floor facility was graced with broad expanses of landmarked, factory-style windows, but presented challenges in terms of layout and programming, he notes. To reach Clicquot's corner area beyond other tenant locations, for example, a new public corridor was required to connect to one corner of the company's rectangular space. Because enclosed executive offices would adjoin the terrace at the end of the office opposite the entrance, circulation between public and private

TRADITIONAL INTERIORS WERE REPLACED BY A LOFT WITH OPEN SIGHT LINES AND PANORAMIC VIEWS OF MANHATTAN.

zones was a grappling point for the design team.

A kitchen, bar, café, and wine-storage area were set requirements. "Flexible, accessible facilities to accommodate special events such as wine tastings were a key part of the program," adds project partner Caterina Roiatti, AIA. In terms of circulation, "no one wanted guests to wade through open office areas to reach the terraces during a party. The floor plan had to balance the demands of entertainment areas on one hand and private office, support staff, and production areas on the other."

The conference room (opposite, bottom left and top) juts into the bar and café area. The C.E.O.'s private office (above) and another executive's office (opposite, bottom right) are faced with glass walls and doors treated with translucent film.

To maintain internal sight lines while maximizing daylight and framing the panoramic views, a series of glass-framed enclosures were set within the boxy building envelope. The architects say they were inspired by the classic Veuve Clicquot champagne bottle itself. The shapely container influenced curving glass walls "with a liquid, transparent feeling, which transmit daylight to the core while encouraging a flow of movement," Roiatti says. Meanwhile, the bottle's distinctive orange label (called "Clicquot yellow" by employees) was adapted as an accent color.

The office design capitalizes on volume and light to trump the space's vast horizontality. Visitors are greeted at the Clicquot reception area by long views looking diagonally through the glass-enclosed conference room and work spaces beyond; one can see skyscrapers from the outset. Set between the concave front edge of the reception desk and the perimeter of glass doors and windows facing the terrace, the private meeting room becomes a central focal point, with the "fork in the road" it creates in plan presenting two main circulation choices. The floor-to-ceiling glazing of the conference room enclosure is faceted to echo the lines of the Starrett Lehigh Building's perimeter wall. Though its meeting-in-a-fishbowl configuration puts participants on view at center stage, the room is fitted with blackout draperies that can be deployed for privacy.

The beveled line of the building's glazing is reiterated by the outline of the nearby bar (below). The existing concrete floors were stained in a sepia-like shade that approximates the color of

vintage Veuve Clicquot wine labels and bottle glass. A café area beyond the conference room is set near windows overlooking the 4,000-square-foot terrace, newly outfitted with pavers (right).



Enclosing executive and management offices, floor-to-ceiling glass walls configured without visible framing seem to dissolve the mass of interior spaces. Treated with bands of translucent film, the enclosures afford a degree of privacy while conveying openness. Ceiling tiles and tackable surfaces manufactured from recycled materials also convey a progressive culture. To also meet the mandate of low-cost, durable materials, an orange laminate bar and tabletops, in addition to orange paint accents, approximate the signature Clicquot hue without requiring custom color-matching. Bright, lightweight chairs and bar stools are a perfect spot for guests to perch while toasting the sunset over the skyline. ■

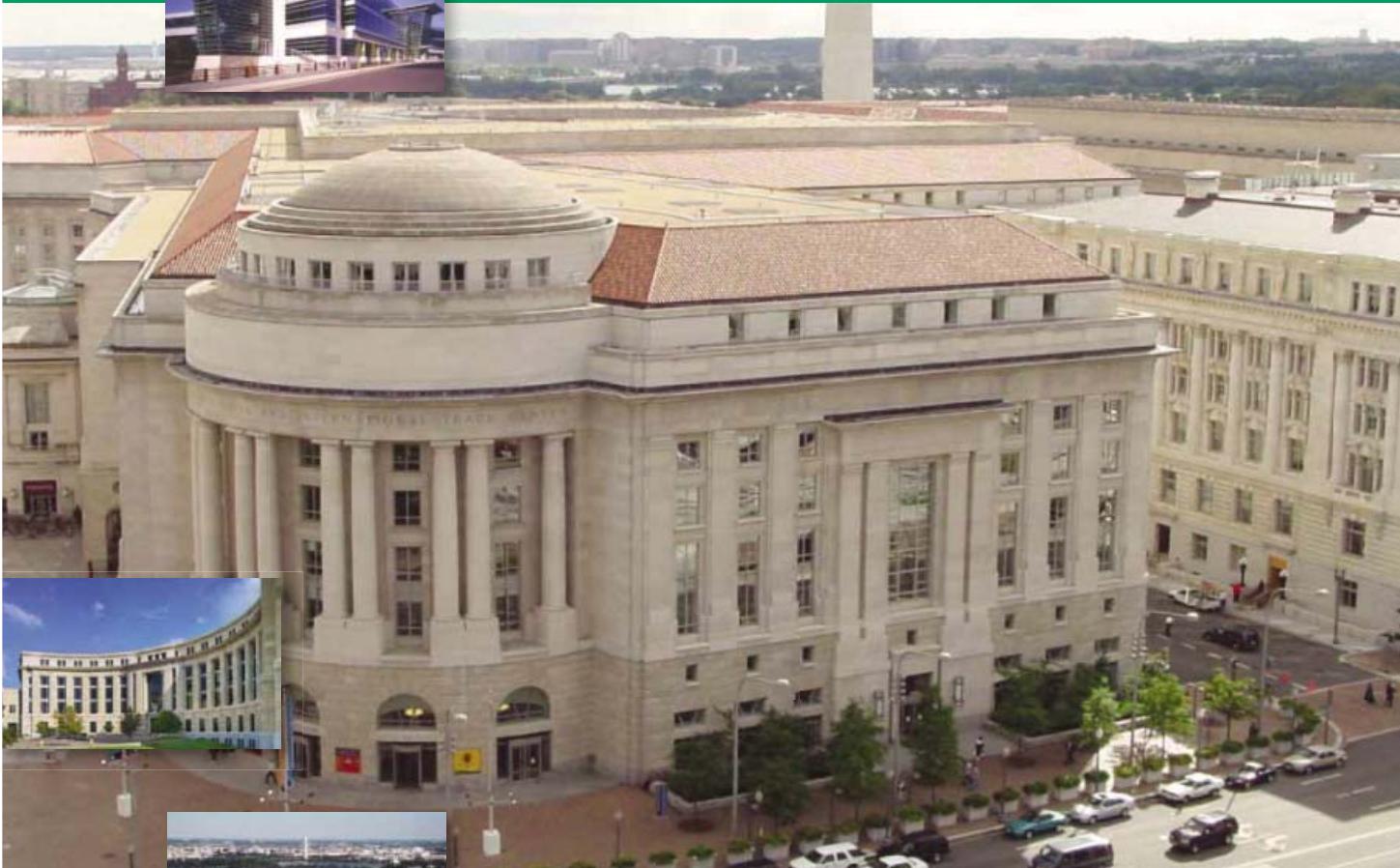
Project: *Clicquot, Inc., New York City*
Architect: *Traboscia Roiatti—Robert Traboscia, Caterina Roiatti, AIA, partners in charge; Diego Otero, Michael Silverman, Andres Tenorio, project team*
Consultants: *Liker Associates (engineer); Jim Willey/International Lights (lighting)*
General contractor: *Celtic General Contractors*

Sources
Furniture panels: *Trespa USA*
Acoustical panels: *Tectum; P.E.P.P.*
Chairs: *Heller; Vitra*
Shelving: *Rakks*
Lighting: *Atlite; Lucifer Lighting; Selux; Hess America*

For more information on this project, go to Projects at www.architecturalrecord.com.



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A layering of steel, glass, and felt panels and screens defines the entry to Grip. Halogens and fluorescents create sparkle.

Transparency, lightness, and a sense of play enliven two Toronto offices designed by architect **Johnson Chou**

By **John E. Czarnecki, Assoc. AIA**

Toronto is home to a number of young multimedia design firms whose offices near downtown are often nondescript, with exposed brick walls in renovated warehouse buildings. While the firms may be creative, they can become bland landscapes of standard, open-plan workstations. Taking a different tack, two firms, Grip Limited and Medium One Productions, turned to Toronto architect Johnson Chou to design spaces that better reflect their companies' distinctive, sophisticated styles. Chou, who says he was inspired by the notion that a workplace can help engage both a firm and its client to achieve a creative vision, developed two offices that enhance the industriousness of each company without overemphasizing the industrial nature of the core facilities it occupies.

John E. Czarnecki, Assoc. AIA, is an acquisitions editor of architectural books at John Wiley & Sons and a former associate editor of ARCHITECTURAL RECORD.

Since 1999, Chou has built his practice with projects mostly in Toronto that encompass the design of offices, restaurants, and furniture. Like many of his commissions, Grip and Medium One display his inventive use of materials and exploration of transparency and illumination.

Grip, a creative agency focusing on multimedia print and film design, granted Chou broad design freedom, he says. Perhaps best known in Canada for its irreverent TV ads for Labatt Breweries geared to young men, Grip wanted an office that was neither corporate nor overtly funky, and that reflected a sophisticated rather than sophomoric wit. To find this middle ground, the architect was inspired by Grip's trademark advertising tableaux, in which a spare number of actors and objects are animated in unexpected ways; he kept that idea in mind as he designed the space.

Located on the third floor of a new mixed-use building on Toronto's youth-oriented Queen Street West, Grip's office employs a minimal palette of materials, textures, and a single color—orange—to



Aside from the orange carpet in the lounge (above), floors are a gypsum-based commercial underlay, while ceilings expose the

building's concrete structure (below left). A circular conference room is enclosed by nylon stretched across a steel frame (below).



Exploring the power of materiality and translucency at Medium One, Chou designed a long steel

reception desk fronting a glass ramp (below) and steel workstations topped by illuminated acrylic panels (right).



great effect. From the elevator, the sweeping curve of an acrylic wall, which encloses a conference room, leads past the orange Grip logo to the main entrance. A wall, covered in gray felt to dampen sound and add texture, defines the path to workspaces while separating public and private realms.

Programmatically, Chou layered sequences of forms and enclosures within the 6,700-square-foot envelope. The tableaux include a suspended, spherical meeting pod enveloped in nylon fabric stretched on a steel frame. A glass-enclosed lounge features orange carpet (besides the

AT TWO TORONTO MEDIA FIRMS, GRIP AND MEDIUM ONE, GLASS PANELS AND LUMINOUS SURFACES CONVEY OPENNESS.

signage, the only bright color present) and sofas Chou designed that attract employees taking breaks during and after late-night work sessions. The lounge is also soundproofed for blaring stereos and televisions.

Private offices for Grip managers hug the south wall, with cubicles reserved for account managers. In creative team areas, workstations can be divided for privacy via sliding, galvanized-steel doors. Clear and translucent glass panels throughout convey openness and informality.

A few blocks west of Grip, Medium One is set within a former munitions factory with original wood and rough concrete floors, heavy timber framing, and remarkably beautiful brick walls. Chou's simple

Modern office installation contrasts with the sublime yet aging existing conditions. At the entrance, a stainless-steel reception desk spans the length of a frosted-glass ramp that leads to the creative staff wing. Custom workstations feature steel bases and acrylic enclosures that pivot to open and close. When lit, the workstations appear more like an art installation than standard desks; Chou confirms that he was inspired by the illuminated artworks of James Turrell when tackling this office configuration.

At Grip and Medium One, Chou explores translucency, materiality, and complexity of form. Though each is distinctive, both of the offices express the playful yet professional nature of the creative work at hand. ■

Project: Grip Limited, Toronto

Architect: Johnson Chou—Johnson Chou, Anne-Rachel Schiffman, Steffanie Adams, David Annand Peterson, Seth Matson, Stacie Amo, Parisa Manoucheri, project team

Engineer: Nunn Warden Design

General contractor: MCM 2001

Sources

Glazing: CLO Glass; CYRO

Furniture: Keilhauer; Nienkamper

Project: Medium One, Toronto

Architect: Johnson Chou—Johnson Chou, Michael Lam, Steve Cho, project team

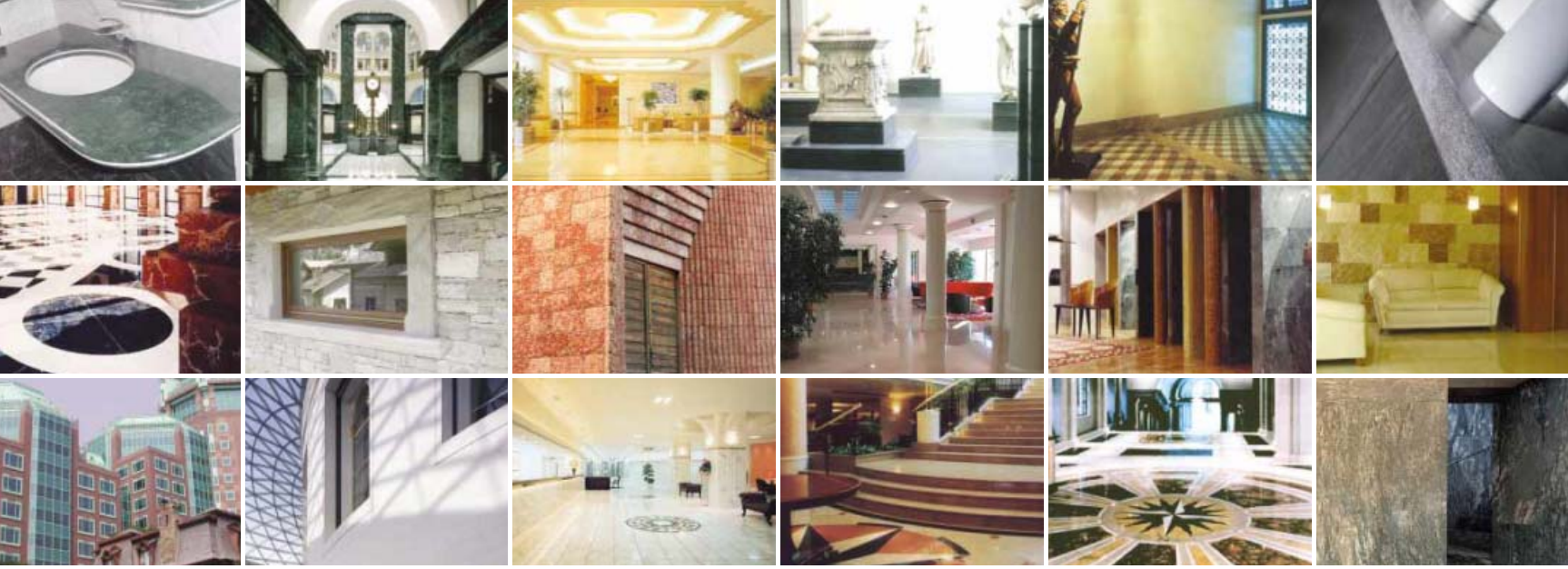
General contractor: Pro-Co

Sources

Glazing: CLO Glass

Lighting: Eurolight

For more information on this project, go to Projects at www.architecturalrecord.com.



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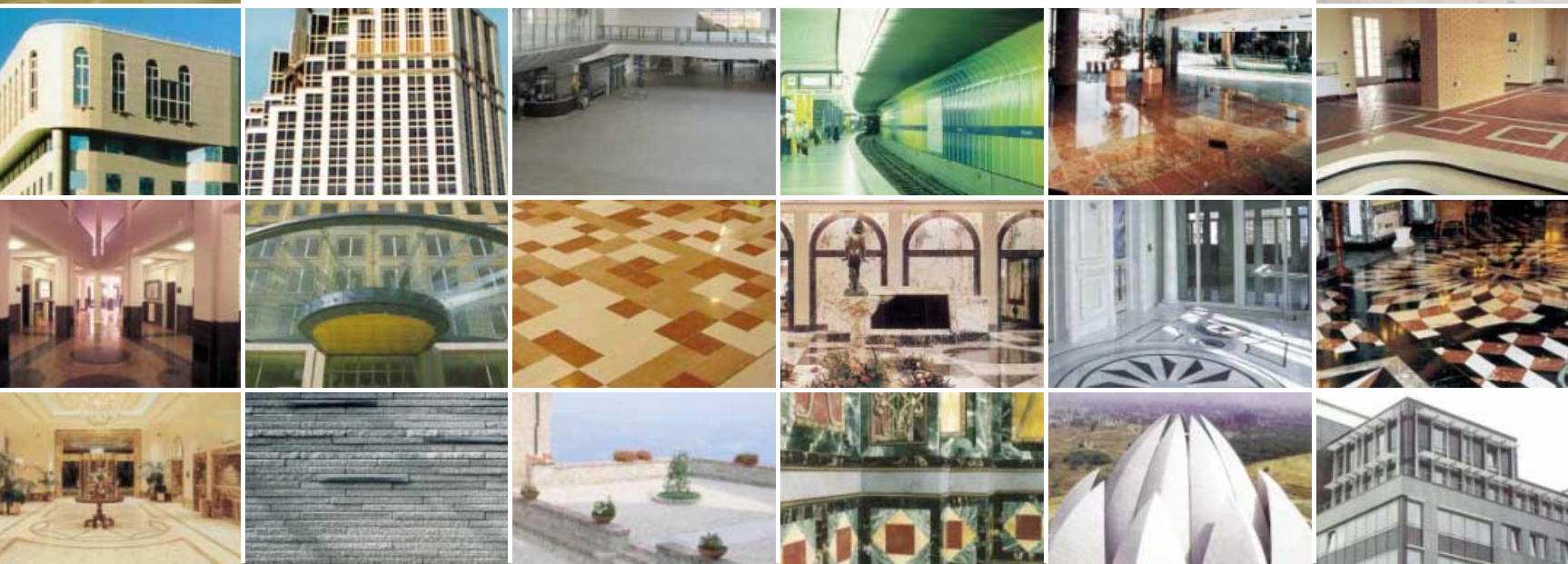


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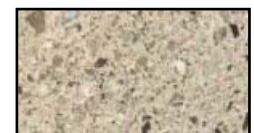
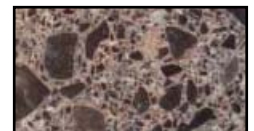
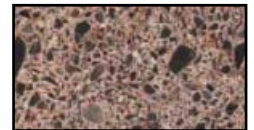
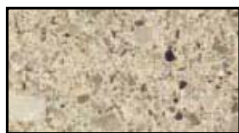
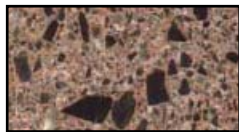


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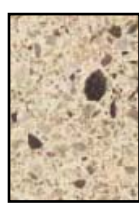
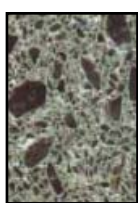
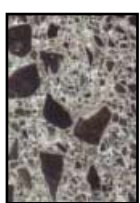
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At the Milan Furniture Fair, Frank Gehry translates his signature shapes into chairs and door hardware

With major new works such as the Stata Center at MIT, a music pavilion and bridge at Millennium Park in Chicago, and two recent civic building commissions in Brooklyn, Frank O. Gehry remains dead center on the radar of architects working at full-tilt. (His new bottle for the Polish vodka brand Wyborowa won over another strain of aficionados in May.) At the Milan Furniture Fair in April, Gehry switched gears to blaze a trail within the world of interior furnishings and fixtures. His furniture designs for American manufacturers Emeco and Heller joined shapely hardware for the Italian company Fusital/Valli&Valli to blanket the show's Pavilion 20 in FOG. Though shown as prototypes with some tweaking to come, the chairs, tables, and door handles captured the architect's signature melding of industrial motifs (gray or natural finishes), materials (aluminum, resin, stainless steel), and playful shapes (door handles evoked fish and arrowheads), while Heller's line seemed like abstractions of his building models. Among the highlights:

The stacking Superlight chair has an optional felt pad supported by an aluminum base. Emeco, Hanover, Penn. www.emeco.net **CIRCLE 251**

For use indoors or out, a series of cubes, tables, and a sofa come in silver resin. Heller, New York City. www.helleronline.com **CIRCLE 252**

The FOG Duemilaquattro (abstract fish shapes) and Arrowhead series include door and window handles, knobs, and coat hooks in finishes such as polished brass and satin stainless steel. Fusital/Valli&Valli, Renate, Italy. www.vallievalli.com **CIRCLE 253** *William Weathersby, Jr.*

For more on these designs, plus Gehry discussing his work with Emeco, go to www.architecturalrecord.com.



Clockwise, from top left: Gehry perched on his cube for Heller; his sketch for the Superlight folding chair by Emeco; two views of the Superlight chair in brushed/anodized aluminum; the Frank Gehry Furniture Collection by Heller; maquettes of the Heller line; and Fusital/Valli&Valli's door handles in stainless steel (top) and polished brass (bottom).

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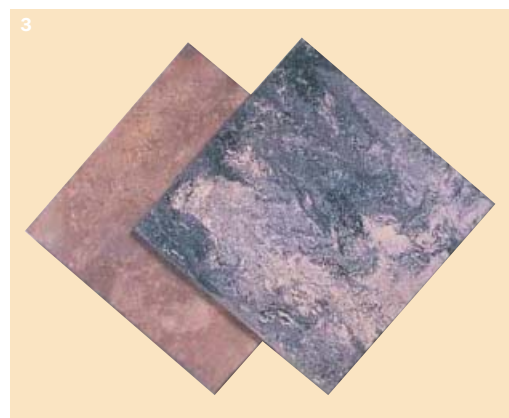
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Natural-Look Spanish Tile a Hit at Cevisima

The look of natural stone, weathered oxidized steel, and even simulated wood grain were big trends among the Spanish ceramic tile showcased at the annual Cevisima trade forum in Valencia, Spain, last March. More than 1,500 exhibitors attracted over 86,000 visitors from 140 countries to view a wide array of tile for commercial and residential use. Another highlight

was a broader range of tile dimensions, with many companies offering six or more sizes in square or rectangular formats with additional coordinating, mesh-mounted mosaics and bar- or rod-shaped accent pieces. Bright colors, including red, inspired by Pop Art and Art Deco, made a strong return to the market. For more information on these products, Spain's tile industry, or individual manufacturers, visit the Miami-based Tile of Spain Center at www.spaintiles.info. William Weathersby, Jr.



1. Uchi from Saloni is inspired by the texture of Japanese rice paper. This ceramic tile series encompasses coordinating wall and floor tiles. The wall tile is produced in a 12" x 24" format, while the floor tile comes in 12" squares. Uchi offers light tones of ivory, cream, and gray. The series is complemented by a woven-rattan relief tile named Tatami, offered in 12" x 12" and 3" x 12" formats. Saloni, San Juan de Moro, Spain. www.saloni.com **CIRCLE 206**

2. Corten by Tau Ceramic replicates the naturally oxidized steel widely used in contemporary architecture and sculpture. This porcelain tile

series is offered in 12" x 24" and 24" x 24" formats. It is available in an oxidized dark blue iron finish (Corten B) and a rusty bronze color (Corten A). Tau Ceramic, Castellon. www.tauceramic.com **CIRCLE 207**

3. Alcalagres specializes in the production of commercially rated porcelain tile. Its Islas Series of double-loading porcelain tile is offered in 16" x 16" and 13" x 24" formats and comes in abstract, nature-inspired hues, including blue, yellow, and green. Options are a polished or smooth matte-satin finish, with coordinating pieces. Alcalagres, Madrid. www.alcalagres.com **CIRCLE 208**

4. Inalco's Structures, a series of 8" x 8" wall tiles, is produced in 12 colors, including white, gray, and various shades of green, lilac, and blue. This series features 10 design reliefs that can be mixed for added visual impact or used individually for a more subtle installation. Inalco, Alcora. www.inalco.es **CIRCLE 209**

5. Altamira is part of Porcelanosa's Ston-Ker collection of all-through body porcelain tile. Ston-Ker is an extensive program of stonelike tiles with a high slip-resistant surface featuring a smooth, nongritty texture. This feature improves safety with the added value of easy clean-

ing. Altamira is produced in 17" x 17½", 17" x 26", and 6" x 26" formats, and comes in gray, beige, and brown. Porcelanosa, Villarreal. www.porcelanosa.com **CIRCLE 210**

6. Keraben's Futura is a commercially rated, all-through body porcelain tile series, engineered for floors and available in a polished, high-gloss finish, a semipolished satin texture, or with a natural matte surface. The tiles are offered in black, white, cream, gray, and mocha. Futura is produced in 16" x 16" and 12" x 24" formats. Keraben, Nules. www.keraben.com **CIRCLE 211**

Interiors Products Contract Fabrics



◀ Cushionlike back fabric

Herman Miller now offers an upholstered-back option to its Mirra office chair. Mirra's new upholstery fabric, Latitude, is placed on the front of the backrest with a trim piece around the periphery. Latitude's spacer-knit technology provides a cushionlike material for the user to sink into without the use of foam. The fabric comes in 17 colors and is made from polyester that is 100 percent recyclable at the end of its useful life. Herman Miller, Zeeland, Mich. www.hermanmiller.com **CIRCLE 200**

▶ Ancient look for modern fabrics

The Ceramica collection of Crypton jacquard upholstery textiles was inspired by age-old craft techniques, including raku, terrazzo, and fresco. Crypton, the patented textile-treatment process, is engineered to provide extreme stain, moisture, and microbial resistance. The fabrics are intended for projects including health-care, corporate, and hospitality facilities, as well as the residential market. Pallas Textiles, Green Bay, Wis. www.pallastextiles.com **CIRCLE 202**



▼ Working out a better fabric

Burlington Contract Fabrics' (BCF) new Environ fabric (right) is engineered from postindustrial textile chip and is suited for applications where polyester products are currently used for panel and upholstery. One of the newest products from BCF featuring Environ technology is ProKnit (left), a knitted, layered panel fabric and upholstery based on a technology once confined to the performance apparel industry. Burlington Contract Fabrics, Greensboro, N.C. www.burlingtoncontractfabrics.com **CIRCLE 204**



▲ Crafty collaboration

Winkraft is a new brand of contemporary textiles, furniture, and accessories launched by the Winkreative design agency and Bernhardt Design. The first offering from Winkraft is the Alp Maritim collection of upholstery fabrics. Created in collaboration with Swiss textile designer Caroline Flueler, the six designs feature colorways that blend a selection of neutrals with splashes of bright oranges, greens, and blues. Bernhardt Design, Lenoir, N.C. www.bernhardtdesign.com **CIRCLE 201**



◀ Fabrics from the brink

The Brinkman Fabric Collection is now available in the U.S. solely through Roger Arlington's national showrooms. Previously, these fabrics were only available to an exclusive group of Anne Paul Brinkman's own clients. Brinkman, a Dutch designer/artist/architect/antique dealer, created a collection of jacquard woven fabrics in silk, linen, cotton, and mohair, in response to a need for adequate fabrics for his interior projects. Shown here is Allover, a cotton/linen/silk blend. Roger Arlington, New York City. www.apbrinkman.nl **CIRCLE 203**

▶ Vintage textiles

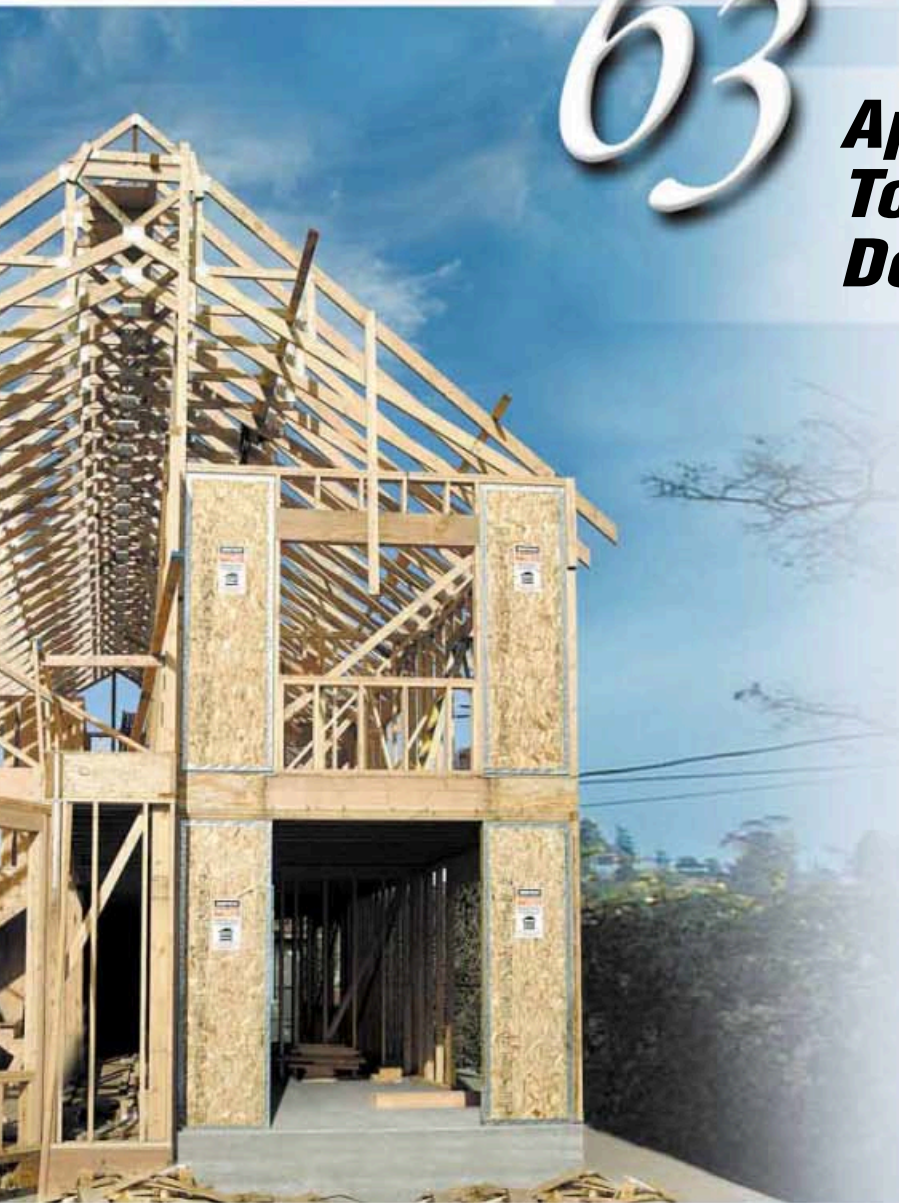
The name for Keilhauer's new Recho Collection of five textiles came from the desire to address different segments of the market—residential, contract, and hospitality—with a collection of sophisticated fabrics inspired by the couture fashions of the 1950s. The collection includes Divine, a wool blend that features a refined faille weave inspired by elegant French coating fabrics; Coco, an embodiment of the texture found in suits from the house of Coco Chanel; Faux, a faux suede that is durable enough for contract settings; and Aria, a semianiline-dyed cowhide. Keilhauer, Toronto, Canada. www.keilhauer.com **CIRCLE 205**



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Practical solutions for when meetings and furniture intersect

According to Herman Miller, while a higher proportion of workplace square footage is being allocated to multipurpose group spaces, collaborative efforts can be impeded by work tools and environments designed mainly to support individual tasks. Herman Miller has responded to this issue with the Intersect portfolio, an offering of flexible, freestanding products designed to be used in open areas. Although primarily intended for settings that support up to six people, Intersect's elements are scalable to accommodate groups of any size.

Intersect is divided into four categories: display products that allow note taking as well as the display of ideas and information; tables in different sizes and shapes; stacking and lounge seating; and boundary products, including four- to six-panel telescoping screens to divide space,

create standing privacy, and add vertical work space.

Rather than focus on a single design vision, Herman Miller chose to work with an array of designers. Mark Goetz's Idea Exchange Center is a large marker board/display surface that also delineates group space. Jeff Weber contributed the Foldaway mobile table, the Caper chair (an existing product), and the Mobile Easel. Kyle Swen and Danny Peter's Work Island serves as a mobile café or a standing meeting space for two to six people. Ayako Takase and Cutter Hutton's Kotatsu worktable features a functional understructure and a clever center-cutout tray, and when workers need to take a load off, David Pessoa's Celeste Lounge Seating offers a soft seating solution. Herman Miller, Zeeland, Mich. www.hermanmiller.com **CIRCLE 212**



The Work Island (above) can serve as a mobile café; detail of the Kotatsu worktable's shelf (top); Mobile Easel features two locking casters (right).



Colorful lacquered executive furnishings

The fruit of one of the Fantoni Research Center's experimental projects, the Stripes collection of executive office furniture was recognized with an award at this year's Salone del Mobile's office exhibition, Eimu 2004. Developed in cooperation with Marco Viola, Stripes uses a sequence of colored bands in three

color schemes, including shades of green (left), multicolor (right), and shades of gray. The system is composed of a bookcase, a desk, and a bench in two width/height combinations. Each element is manually lacquered with high-resistant paint on MDF panels. Luminaire, Miami, Fla. www.fantoni.it **CIRCLE 213**

New standard for sustainable carpet tile

C&A Floorcoverings has introduced the Cycle Collection: two coordinating, nondirectional designs of different scales intended for corporate and government settings. Sequence is the first of the two designs to be released, followed by the blocks-on-blocks design of Cadence. The environmentally friendly carpet tile will utilize Honeywell's (formerly BASF) Savant HRC (High Recycled Content) nylon with a minimum of 50 percent recycled content (25 percent postconsumer and 25 percent postindustrial). In addition, a built-in RS tackifier eliminates the use of wet adhesives,

which can contribute to poor indoor air quality. Independent, third-party certification through Scientific Certification Systems has verified the total recycled content of the product as well as its 100 percent recyclability. C&A Floorcoverings, Dalton, Ga. www.tandus.com **CIRCLE 214**



Products

Commercial Carpet & Furnishings



▲ Something to admire while waiting in line

Shaw Tek introduces In Line, a collection of complementary carpet styles designed for the higher education, health-care, and government markets. Comprised of six products in nine colorways and varying scales, In Line was created using advanced tufting technology and random color thread-up capabilities. It is constructed of EcoSolution Q fiber, among the first products in the world to be fully assessed through the Cradle-to-Cradle Design Protocol. Shaw Industries, Dalton, Ga. www.shawinc.com **CIRCLE 215**

► Coordinating carpets

PacifiCrest Carpets has expanded its portfolio of midpriced, high-performance carpet for the commercial market with the introduction of two coordinating patterns, Aspect (shown) and Perspective.

Complementary, large-scale patterns, the designs unfold in gentle waves and come in a 24-choice color palette. Aspect is precision-tufted in a patterned loop format, while the tip-sheared finish of Perspective creates a softer, distinctive color effect. PacifiCrest Carpets, Irvine, Calif. www.pacificrest.com

CIRCLE 217



► Sit and think

Steelcase's new midpriced office chair, Think, is designed with a three-part "brain"; flexors that adapt to the user's movements; a reclining mechanism that creates resistance proportional to the user's individual weight; and an adjustable back selector. The company worked with McDonough Braungart Design Chemistry to give the chair a "conscience," as well. Comprised of 98 percent recyclable content and up to 50 percent recycled material, Think is the greenest office chair on the market to date. Steelcase, Grand Rapids, Mich.

www.steelcase.com **CIRCLE 216**



▲ Two ways of working with it

Winner of the "Best of Competition" award at NeoCon 2002, Nucraft has enhanced its Origin product line by creating two groupings—Casegood Systems and Contemporary

Casegoods—to address the needs of multitasking executives. The most significant difference between the two groupings is the way in which technology accommodation and access to power and communications are achieved. While the Casegood System relies on the Tech Wall to house power and data connections, the Contemporary Casegood offering fea-

tures a variety of simple technology accommodation and access capabilities that allow for greater configuration options and more attractive pricing. Nucraft, Grand Rapids, Mich.

www.nucraft.com **CIRCLE 218**



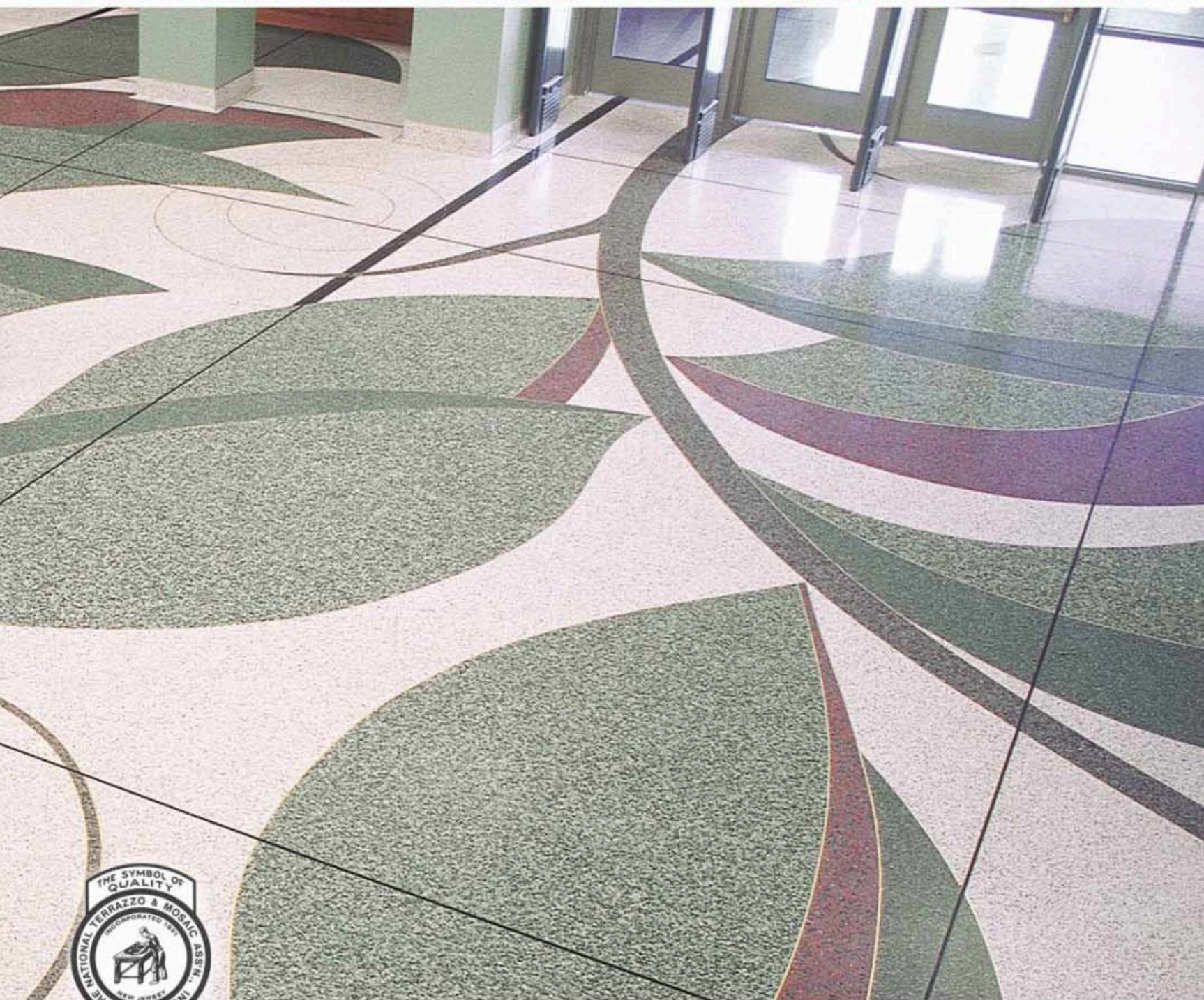
◀ Return of a Modern classic

For more than three decades, Edward J. Wormley (right) was design director for the iconic midcentury Modern furniture company Dunbar. For the first time in more than 50 years, the most significant designs in the history of the company will once again be available.

Comprising more than 45 offerings, the Edward J. Wormley Collection includes the Listen-to-Me chaise (far left), the Chamberlain 9' sofa, Golightly table, Gabrielle lounge chair (near left), and other notable pieces. Dunbar Furniture, High Point, N.C. www.collectdunbar.com **CIRCLE 219**



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Location: Carmel, Indiana
Architect: Meyer, Scherer, & Rockcastle, Ltd.
Designer: Browning Day Mullins Dierdorf, Inc.

Products

Commercial Carpet & Furnishings



▲ Resilient recycled carpet flooring

A low-cost alternative to traditional carpeting or VCT, Finett recycled carpet is a durable solution for high-traffic environments, including airports, schools, malls, and industrial office settings. Offering the look and feel of carpeting, Finett received the highest-class rating for extreme wear in rigorous European wear testing. Finett is sold in 6' to 7' roll widths and some designs are available in modular tile format. Finett has an overall recycled content of 45 percent (postconsumer textile backing). Mats, Stoughton, Mass. www.matsinc.com. **CIRCLE 220**



▲ Smarter table shape

The e-table 2 trapezoid is Vecta's newest wire-ready meeting, presentation, and teleconferencing table. The trapezoid

shape of the table gives everyone a better view of the camera and video display during presentations. The table also offers instant tabletop access to extra-large multifunctional utility bays. At the touch of a button, wide

access doors silently glide open to reveal four electrical outlets, up to 12 voice/data outlets, or a variety of multimedia connectors. Vecta, Grand Prairie, Texas. www.vecta.com **CIRCLE 221**

► Ergonomics for the masses

Allsteel's new midpriced Sum chair features a gas-filled bladder—made of a puncture-proof material borrowed from the biomedical field—to provide automatic, self-adjusting lumbar support. Designed by Marcus Koepke (of Allsteel's #19 chair), Sum offers automatic weight-activated control and provides a universal fit for more than 90 percent of the population. Allsteel, Muscatine, Iowa. www.allsteeloffice.com **CIRCLE 222**



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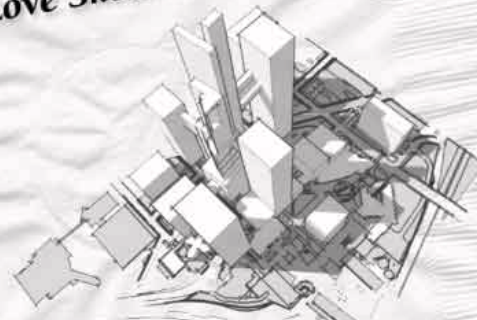
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▼ Like a well-tailored suit for the floor

Simply Artistic is the latest in a string of nine collections that make up Milliken's expansive Simply line. With almost 330 SKUs, the Simply line provides a wide range of coordinated designs that respond to client requests for simple, yet sophisticated styles. Simply Artistic, a 36" modular line in three designs, features the classic ribbed line as the collection's touchstone. Three patterns—Exhibit, Avant, and Display—are available in an array of 12 colors for the office market. Milliken Carpet, LaGrange, Ga. www.millikencarpetsamplestudio.com **CIRCLE 223**



▲ Look good on paper

The Paper Collection is one of the newest designs resulting from the collaboration between the family-owned Northern Italian manufacturer Plank and designers Raul Barbieri and Anna Giuffrida. The Paper Collection is available in side, arm, and swivel options and at bar and kitchen heights. Featuring a tubular, steel-polished chrome frame, the molded seat and back are available in colored laminate, aluminum laminate, and veneer. ICF Group, Taftville, Conn. www.icfsource.com **CIRCLE 225**

▼ Certifying the certifiers

Haworth is helping the U.S. Green Building Council (USGBC) in Washington, D.C., meet its own stringent guidelines for LEED CI (commercial interiors) certification with furniture and movable walls from both Haworth and its subsidiary, SMED. Some of the furniture choices meant using wheat-board instead of the industry standard MDF or particleboard. USGBC also chose FSC-certified cherry veneer for SMED's wood casegoods (Masters Series shown below). Haworth, Holland, Mich. www.haworth.com **CIRCLE 224**



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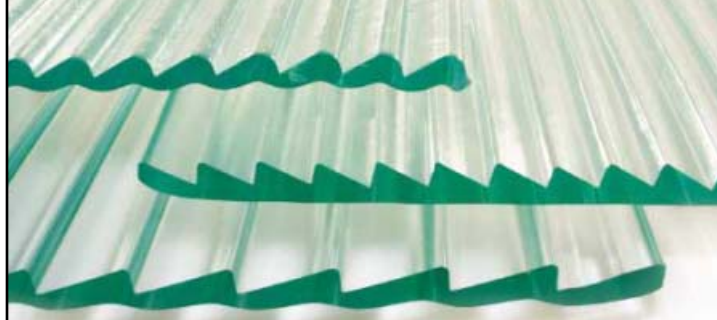
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Product Briefs

► Unusual partners

Architectural Systems received a top award for the Resin & Wood Collection at this year's edition of the retail design show GlobalShop 2004. A surface for both vertical and horizontal applications, the finish combines layers of solid hardwood—including beech, maple, alder, cherry, and walnut—and acrylic. The width of the wood and acrylic strips can be varied within the panel to create a signature look, and both a gloss-polished finish and frosted, unpolished finish are available. Architectural Systems, New York City. www.archsystems.com **CIRCLE 226**



◀ Customize your concept

The Concept Series is a new collection of concealed-fastener exterior metal wall panel profiles. Available in 12" and 16" widths, the panels are available in G-90 galvanized steel, aluminum, stainless steel, and Centria's Durallure finish system. Profile options consist of narrow ribs, medium-width ribs, and wide flat surfaces that can be used to create a single repetitive appearance or to generate a pattern or feature on a wall elevation. Centria, Moon Township, Pa. www.centria.com **CIRCLE 228**

► His American chair debut

Parisian designer Patrick Norguet makes his American debut with the Orly lounge chair and sofa, available from Bernhardt. Norguet, who has worked in the fields of fashion, architecture, and product design, generated a stir in Milan four years ago with his "Rainbow" chair of colored Plexiglas layers for Cappellini. Orly comes in its own bright palette of colors in fabric and leather, and features brushed nickel legs and a back cushion that appears to plug into the back of the chair. Bernhardt Design, Lenoir, N.C. www.bernhardtdesign.com **CIRCLE 230**



Product of the Month Ductal Components

The first light-rail transit station constructed with Lafarge North America's Ductal high-performance composite material is expected to open for commuters at Shawnessy Station in Calgary, Canada, at the end of the month. The Ductal components, manufactured for Calgary architect Enzo Vicenzino of CPV Group Architects & Engineers for the City of Calgary, include 24½" thick pre-cast curved canopies (measuring approximately 16½' x 20'), as well as struts, columns, beams, and rain gutters. The composite is significantly stronger than normal concrete: It has a compressive strength of 20,000 psi (six to seven times stronger) and a flexural strength of 4,000 psi (three times stronger).

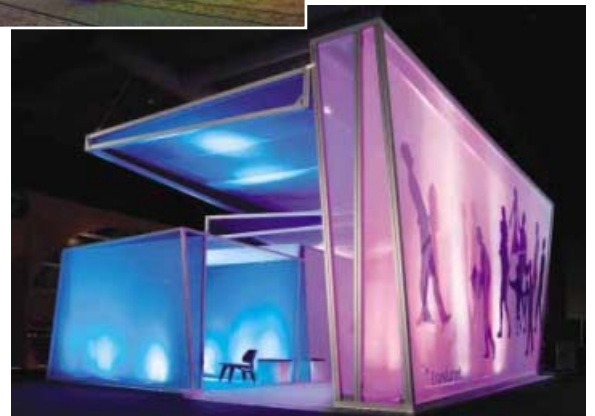
To validate the performance of the structural system and material, a full-size canopy prototype was sent to the University of Calgary for intensive, full-scale load tests. The results confirmed the Ductal canopy not only surpassed the test criteria, it easily carried full-factored live and dead loads without cracking. Lafarge N.A., Calgary, Canada. www.imagineductal.com **CIRCLE 227**



▼ A dynamic exhibition of fabric

Transformit, a tension-fabric-structure design, manufacturing, and rental company, has unveiled its new collection of tension fabric structures for exhibition, event, interior, and retail applications. The Dynamics collection, composed of six interchangeable components, features an aluminum extrusion frame that can hold up to three layers of fabric.

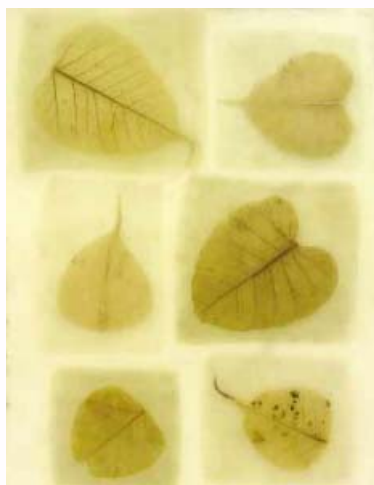
Different lighting effects can be used between the layers to achieve visual motion. Transformit, Gorham, Maine, www.transformitdesign.com **CIRCLE 229**



Product Briefs

▼ Exhibitions honoring textile artists

In the past few months, two different New York galleries featured the work of textile artists. The design gallery/store Moss introduced "fossilized textiles" (below right) created by artist/designer Luisa Cevese with light layers of polyurethane and precious fabrics, while Gallery Gen presented the work of master Japanese textile artist, Jun-ichi Arai. Over 30 of Arai's works, including cloths made of a flame-retardant fiber he has been secretly formulating for theater drapery, were on display (left). Gallery Gen, New York City. www.gallerygen.com **CIRCLE 231** Moss, New York City. www.mossonline.com **CIRCLE 232**



▼ Real ivory? Don't be nutty

Providence Artworks new Ivory of Tagua Collection features an ivory look-alike harvested from the Tagua Palm Nut. The cabinet knobs—hand-carved by Ecuadorian artisans—look, feel, age, and have the strength of elephant ivory. Used as an ivory



substitute since the Victorian era (mostly for buttons), the demand for the Tagua nut declined after the discovery of less expensive synthetics. Providence Artworks, Venice, Calif. www.providenceartworks.com

CIRCLE 233

► Concrete masonry units

Made of 10 percent recycled thermoset high-strength plastic powder, Sealtech concrete masonry blocks are 10 percent lighter than (and have a 2-hour fire rating, R value, and U value comparable to) standard concrete block. The water-resistant blocks come in 16 colors, with a split-face or smooth finish, in a standard 4", 8", and 12" size. US Technology, Canton, Ohio. www.sealtechblock.com **CIRCLE 234**



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▲ A day at the park

Mosaicist Jonathan Mandell recently completed an 8' x 6' mosaic commissioned by the Philadelphia Phillies organization as a permanent artwork for the new Citizens Bank Park. Mandell selected an array of semiprecious stones and minerals along with ceramic tile, glass, and metal for the ballpark scene: A cotton candy vendor by the visitor's dugout has cotton candy made of rose quartz; the ball approaching the outfield wall is made from iridescent glass; and the hot dog vendor on the bottom right has a metal hot dog caddy made from nickel tile. In addition to this scene, Mandell also created a 6' x 4' mosaic of Phillies player Jim Thome at the plate for the stadium. Jonathan Mandell Mosaics, Narberth, Pa. www.jonathanmandell.com **CIRCLE 235**

▼ A rug by any other name

Architect Michael Graves, FAIA, has designed a new collection of Wools of New Zealand Brand rugs from Glen Eden. The collection includes 18 patterns (Rose, below), each embracing Graves's experiences as an architect. All patterns are offered in custom shapes and sizes, and custom colors can be matched from a sample or selected from a palette of 42 standard shades. Wools of New Zealand, Calhoun, Ga. www.glen-eden.com **CIRCLE 236**



▲ New shade of mold-control

Temple-Inland has introduced Silent Guard TS, a mold-resistant version of its existing Silent Guard shaftliner panels. Designed for elevator shafts, stairwells, and area separation walls, Silent Guard maintains the same sound-control and fire-resistance of the traditional product. The TemShield protection system is manufactured in both the core and the surface of the panel and is recognized on the job by a new magenta face paper. Temple-Inland Forest Products, Diboll, Texas. www.templeinland.com **CIRCLE 237**

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Joseph J. Scarpuola Architect, photo: Chris Bausch

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Product Briefs

▼ Fabric duct filter system

DuctSox's Final Filter is the HVAC industry's first replaceable in-duct air filter for fabric duct that increases IAQ and energy savings while reducing outdoor air requirements and building maintenance. The cone-shaped Final Filter is designed for supplementing primary filter systems in new or retrofit buildings with DuctSox air dispersion. DuctSox, Dubuque, Iowa. www.ductsox.com **CIRCLE 238**



▲ Cladding alternative

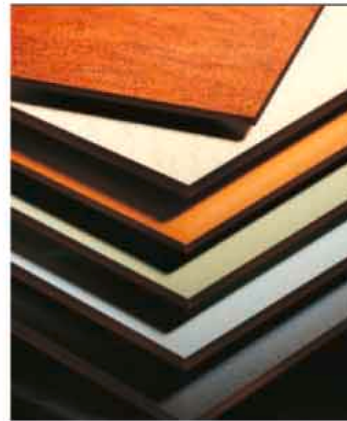
The Fasec facade system combines wood composite sheathing, a base coat reinforced with glass fiber mesh, and a finish coat available in a range of colors. The system incorporates a lightweight foam resin binder and can be used with either steel or wood frames. Fasec is constructed with a ventilation gap and can be used for residential and commercial buildings. Facades, Springfield, Mo. www.facadesinc.com **CIRCLE 239**

► Coastal-approved roofing

The Met-Tile roofing system is now available in an aluminum substrate with a Meadow Green finish. Though it looks like tile, the roofing consists of the same profile as the standard Met-Tile system:



3' wide panels that are securely applied for wind- and weather-tight performance. Aluminum's superior resistance to corrosion and water makes the product ideal for coastal environments. Met-Tile, Ontario, Calif. www.met-tile.com **CIRCLE 240**



◀ Exterior-grade laminate

Used in Europe for more than 20 years, MEG (Material Exterior Grade) from Abet is an exterior high-pressure laminate consisting of layers of kraft paper impregnated with thermosetting phenolic resins. Bonded by heat and high pressure, the core and exterior color are all one piece. MEG is graffiti-proof, and most custom patterns can be created digitally for building exteriors. Abet, Englewood, N.J. www.abetlaminati.com **CIRCLE 241**

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Product Literature

Tile competition winners

Ceramic Tiles of Italy has released a new book titled *Ten Years of Design Excellence: Ceramic Tiles of Italy Across America*. Award-winning tile applications, culled from the Ceramic Tiles of Italy Design Competition, are the focus of the 114-page book, which features more than 25 projects. Italian Trade Commission, New York City. www.italiatile.com **CIRCLE 242**

Faucet brochure

The 2003 Price Pfister faucet collections are featured in a new 60-page color brochure, which details 48 new faucets in a range of finish options and available configurations. Price Pfister Faucets, Lake Forest, Ill. www.pricepfister.com **CIRCLE 243**

Indoor/outdoor door catalog

Stilewood's 32-page architectural catalog features more than 65 of the company's standard interior, exterior, and custom door designs shown with glass and transom choices and various prehung options. The catalog illustrates Stilewood's cross-machining capabilities and the many species options available. Stilewood, Port Coquitlam, British Columbia, Canada. www.stilewood.com **CIRCLE 244**

NEW SITES FOR CYBERSURFING

Product samples downloadable in MPEG format www.centria.com/public/products/samplegallery.asp



Online reference for the basic stock metal products regularly produced in the U.S. www.metalreference.com

New site for contemporary kitchen range hoods www.siriushoods.com

Site that promotes the sustainability of Italian tiles www.s-tiles.it

Guide to greener specs

PPG Industries has outlined its new Ecological Building Solutions collection of glass, coatings, and paint for sustainable design in a new 12-page booklet called *It's Just Our Nature*, which provides specific guidance on how PPG products can help architects earn LEED credits for their projects or meet ASTM E 2129 standards for sustainable building. PPG Industries, Pittsburgh. www.ppg.com

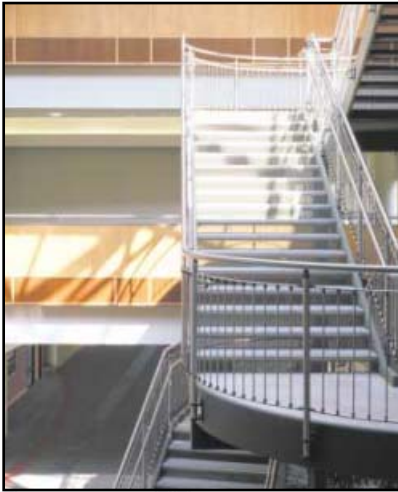
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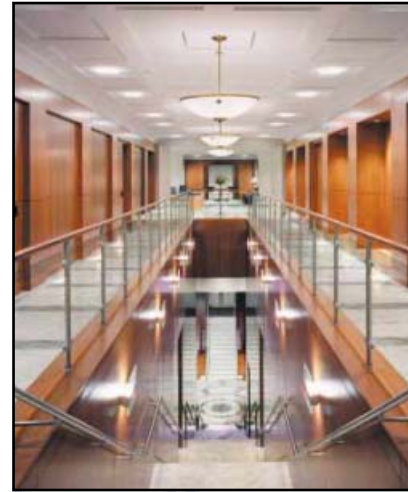
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Product Literature

Countertop installation CD

The Marble Institute of America (MIA) has released a new training CD-ROM for the natural stone industry. *Natural Stone Countertop Installation Overview* is the first in a series of instructional tools the association is developing for members and others within the stone industry. Marble Institute of America, Cleveland. www.marble-institute.com

CIRCLE 246

Signage system guide

Vista System's new *MCFT Guidebook 2 Signs* includes more than 500 examples of sign types professionals can design with Vista's new Modular Curved Frame Technology (MCFT) system. The 82-page guidebook came as a result of the market's demand for a modular system with custom-fabricated appearance and capabilities. Vista System, Sarasota, Fla. www.vistasystem.us **CIRCLE 247**

Residential recreations

Rejuvenation's 124-page *Lighting & House Parts 2004 Resource Guide* features hundreds of recreations of original American lighting fixtures and house parts representing styles from 1880 to 1960. Showcased in the guide

is Rejuvenation's new On the Porch collection of products for the front porch, including light fixtures, exterior door sets, door bells, brass numbers, and mailboxes. Rejuvenation, Portland, Ore. www.rejuvenation.com **CIRCLE 248**

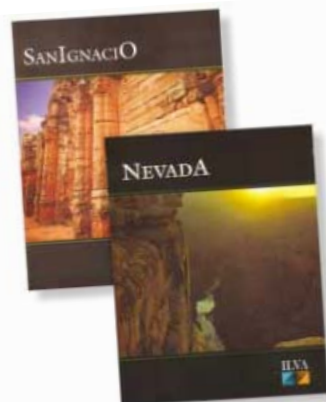
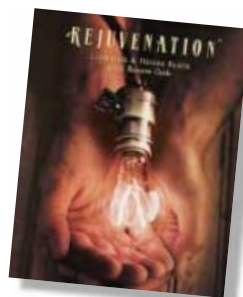
Porcelain tile brochures

Illa S.A. offers two new brochures that highlight the firm's San Ignacio and Nevada series of porcelain tiles, inserts, and listellos through detailed photographs and technical product information. 305/667-7090. Ceramic Consulting Corporation, Coconut Grove, Fla.

CIRCLE 249

Customizable workstations

Allsteel has introduced several publications to support its new Landscape Surfaces program in partnership with Pantone that allows any color in the system to be applied to Terrace tiles. In addition to a *Design Guide* that provides designers, specifiers, and end users with a comprehensive offering of workplace solutions using the Terrace workstation family, Allsteel offers a *Surfaces and Materials* brochure that features the newest options for Terrace tiles. Allsteel, Muscatine, Iowa. www.allsteeloffice.com **CIRCLE 250**



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ATTENTION ALL BUILDING PRODUCT MARKETERS:

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Product Reports will again be a major editorial feature in the December issue of ARCHITECTURAL RECORD, presenting the most interesting and useful new building products that will be available to the architect, specifier, and designer in 2005. A panel of architects, consultants, and editors will select products for publication from those submitted by September 3, 2004—and we very much want your company to be included.

Like every **Product Reports** since our first one in 1972, this feature is an A&D reference to product introductions of the previous year and provides our readers with the most up-to-date information available.

There's no entry fee. Just review the product categories listed under "Submit" at www.archrecord.com to locate the section most appropriate for your product. Our panel will view each product category as a group, so please include an image of each submission in a slide, transparency, glossy color photo, or color printout of a digital image. If you send a CD, you must provide a labeled color printout of each image that is on the disk. Please make sure the digital image is a high resolution TIFF (300 DPI, at least 4 x 5 inches). If you have a sample of your product (no larger than 8 x 10 inches), please include it with your submission. E-mailed submissions will not be accepted.

Send the submission form (following page), image, sample, and descriptive material to:

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Please take a few minutes to round up the photos and information needed. If you have any questions, send a note to the Products Editor, Rita F. Catinella, at rita_catinella@mcgraw-hill.com.

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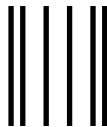
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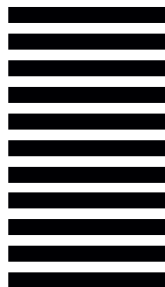
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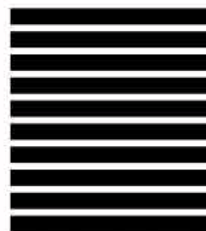
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Program title: "Window Installation," sponsored by JELD-WEN Windows & Doors (06/04, page 311)

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| 3. | a | b | c | d | 8. | a | b | c | d |
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Program title: "Italian Tile," sponsored by The Italian Trade Commission (06/04, page 317)

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| 4. a | b | c | d | 9. a | b | c | d |
| 5. a | b | c | d | 10. a | b | c | d |

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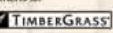
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Program title: "New tools for specifying architecturally exposed structural steel," sponsored by AISC (06/04, page 323)

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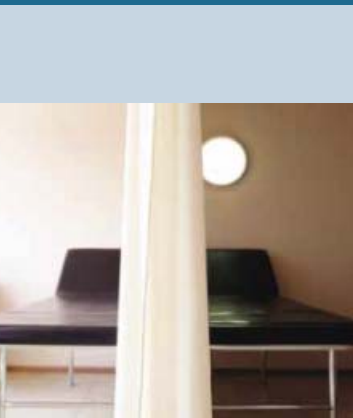


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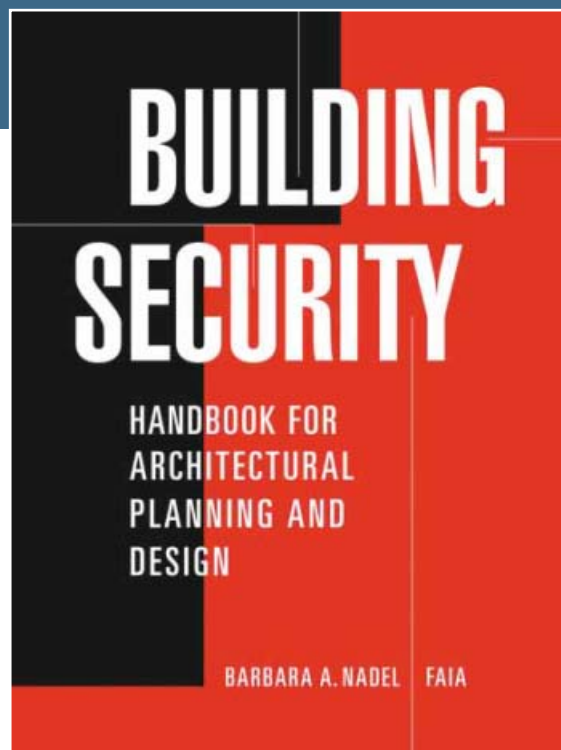
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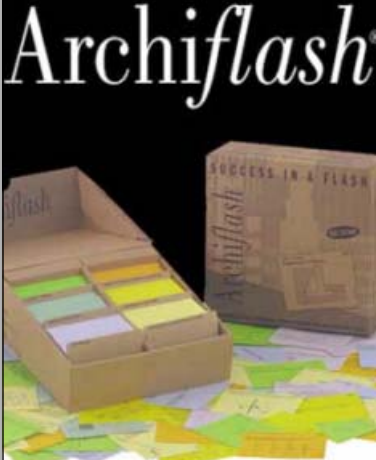
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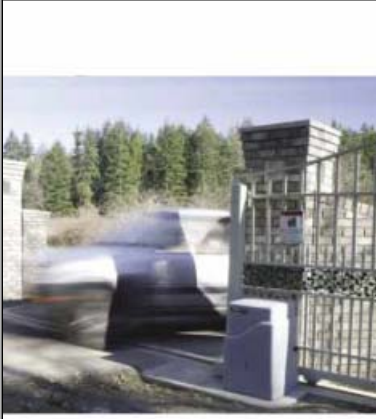
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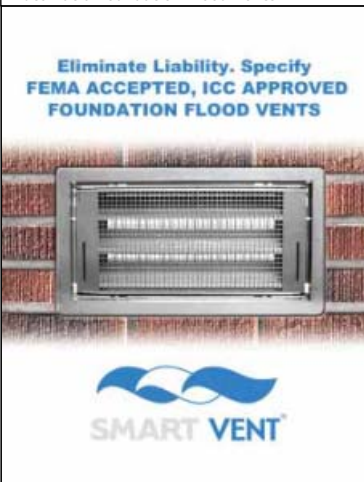
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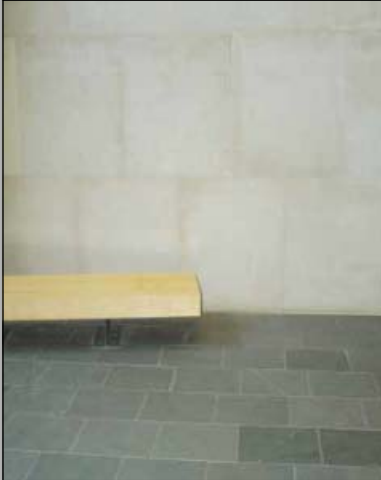
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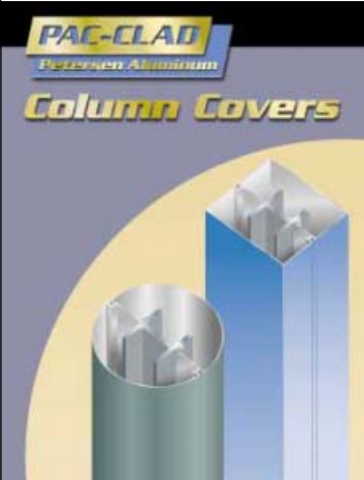


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171

Lapeyre Stair Inc.

Convenient Conventional Stairs



5 Metals

In addition to its unique alternating tread safety-stair products, Lapeyre Stair now provides in-house design and fabrication of conventional industrial stairs that are designed and built to order. With proprietary computerized design capabilities and a facility dedicated to stair fabrication, Lapeyre Stair can offer unprecedented one-stop-shopping convenience, low prices, and lead times of three weeks or less. Check the Web site for conventional stair product updates and technical information, plus interactive features related to Lapeyre's Alternating Tread Stair: downloadable CAD files, online pricing, and more. In space-squeezed applications, the Lapeyre Alternating Tread Stair provides safer, easier access than vertical or ship's ladders.

www.lapeyrestair.com



169

Melton Classics, Inc.

Architectural Products



6 Wood & plastics

Melton Classics provides the design professional with the most comprehensive selection of quality architectural products in the industry, including architectural columns, balustrades, moldings, cornices, and a wide array of architectural elements. Architectural columns are available plain or fluted, load-bearing or column covers, round or square in fiberglass, fiberglass/marble composite, synthetic stone, cast stone, GFRC, and wood for paint or stain. Melton Classics offers a maintenance free balustrade product ideal for any application. Balustrades are available in four durable materials: MarbleTexTM synthetic stone, poly/marble composite, cast stone, and polyurethane, and can meet any code or radius application.

www.meltonclassics.com



172

Melton Classics, Inc.

Online Resource for Balustrade Products



5 Metals

Announcing BALUSTRADES.COM. Melton Classics balustrades.com Web site provides the design professional with the industry's most comprehensive selection of maintenance-free and low-maintenance balustrade products, allowing the design professional to select the ideal product for any design, application, and budget. Classic balustrade systems are available in integrally pigmented synthetic stone, marble/resin composite, cast stone, high density polyurethane, and fiberglass in over 50 sizes and designs. Custom balusters, radius railings, radius stairs, and lightweight balustrades are available. In addition to its balustrade products, Melton Classics also offers architectural columns, cornices, moldings, and architectural elements.

balustrades.com



170

Simpson Strong-Tie Co., Inc.

Anchor Tiedown System

925-560-9088



6 Wood & plastics

For multistory commercial buildings or apartment houses, Simpson's ATS (Anchor Tiedown System) provides an improved method for anchoring shearwalls to resist uplift forces caused by earthquakes and high winds. The patented concentric holdown system integrates vertical load resisting hardware easily and economically into standard wood frame construction up to five stories high. Anchor Tiedown System features high load capacity, fast installation, no horizontal drilling, and take-up of 1-in. of wood shrinkage and compression per floor. It can be installed allowing rod offset up to 1-3/4-in. maximum per floor. Code recognized by ICBO (ER-5090) and COLA (RR-25326). Fax number 925-833-1490.

AIA Booth #1132



173

SpecTrim Building Products, LLC		
Pre-Finished Molding & Wainscot		
	6 Wood & plastics Transform a plain wall into a dramatic backdrop with pre-finished molding and panel components from SpecTrim Building Products. SpecTrim's PVC veneer provides the rich warm look of real wood at a fraction of the cost. Easy to maintain, SpecTrim is also free of the knots, splits, and sap streaks found in lumber. Wainscot installs easily using SpecTrim's unique blind fasten system and is stocked in five finishes and paint grade. Moldings are available in 25 profiles and 15 finishes, with customizing available. Best of all, no timber is harvested and no forests are destroyed.	
	www.spectrimbp.com	AIA Booth #314  174

Cedar Shake & Shingle Bureau		
Cedar Roofing & Sidewall		604-820-7700
	7 Thermal & moisture protection The Cedar Shake & Shingle Bureau is a non-profit trade association founded in 1915. The organization provides installation instructions, AIA CEU educational seminars and technical advice. Member manufacturers produce Certi-label brand cedar shakes and shingles for both roofing and sidewall use as well as undergo random, unannounced third party inspections to ensure product quality. Certi-label brand cedar shakes and shingles are a renewable resource, durable, impact and wind resistant, and available with either pressure impregnated preservative or fire-retardant treatment. Some Certi-label products are available in pre-stained or pre-primed finish.	
	www.cedarbureau.org	AIA Booth #2262  177

Active Ventilation Products		
Roof Vents & Ventilation Systems		
	7 Thermal & moisture protection AVP manufactures innovative state-of-the-art roof vents and ventilation systems for commercial and residential buildings. Active's ventilators remove moisture and heat from homes and buildings, thus dissipating damaging vapors. The Aura Ventilator is one of Active's most popular ventilators, because of its unparalleled performance at venting air dynamically out of any home or building. A common system for ventilating commercial roof applications is to use Active Ventilation's Pop Vent as an inlet, in conjunction with the Aura Ventilator. This system effectively ventilates all kinds of flat or pitched roofs. The heads of the ventilators are removable for an easier installation.	
	www.roofvents.com	 175

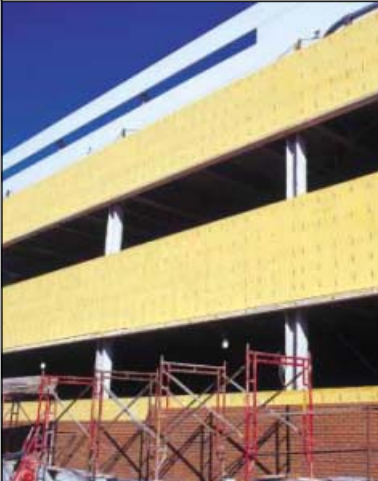
Cosella-Dorken Products, Inc.		
Subsurface Drain Board		
	7 Thermal & moisture protection DELTA®-DRAIN offers complete water drainage and relief of hydrostatic pressure for all sub-terrain construction. It is ideal for use with dampproofing/waterproofing on cast-in-place, block, I.C.F., stone, and wood foundations. DELTA-DRAIN will not tear and its high-flow capacity ensures effective drainage for virtually any construction project. DELTA-DRAIN enhances waterproofing and relieves hydrostatic pressure buildup on foundation walls. DELTA-DRAIN offers the largest variety of sizes on the market today with a twenty year product warranty.	
	www.cosella-dorken.com	AIA Booth #3457  178

ATAS International Inc.		
Metal Wall Cladding		
	7 Thermal & moisture protection ATAS International Inc. introduces the INSPIRE Wall System, a new metal wall cladding made from .032 aluminum with tiny perforations in a heat absorbing surface. The premium finish is available in sixteen standard colors. Mounted a few inches from the main wall, preferably on a southern exposure, fresh air is drawn through the perforations and directed into the building with a fan and duct system. Air space between the walls also acts as an insulator. INSPIRE Wall is environmentally friendly, in that it is using clean, natural energy, thus lowering the need for fossil fuels. The result is improved indoor air quality, free solar heating, and a reduction in HVAC costs.	
	AIA Booth #1973  176	

EcoStar		
Roof Tiles		800-211-7170
	7 Thermal & moisture protection EcoStar's Majestic Slate™ Beaver Tail tiles offer a rounded slate style and unique color variations to create beautiful architectural options for premium steep-slope roofing. Developed using 100% recycled rubber and plastics, Beaver Tail offers an environmentally friendly roofing alternative. All EcoStar tiles offer an elegant look for steep-slope applications along with longevity, durability, and lightweight benefits. Beaver Tail commands an impressive 50-year warranty and offers Class A Fire and Class 4 Hail Resistance. For more information, please call or visit the Web site.	
	www.premiumroofs.com	AIA Booth #521  179

Polyglass	
Roofing Membranes	800-222-9782
	7 Thermal & moisture protection POLYGLASS® offers a wide range of roofing products, including their revolutionary SA Self-Adhesive roofing membranes with ADESO™ technology. Offering a full line of true APP, SBS, and TPO roofing membranes, Polyglass comprises the latest in asphalt adhesive technology, as well as substantial, proven weatherproof compounds, featuring smooth and mineral granule surfacing available in various colors. Also known for their steep-slope roofing products, Polystick underlayments, which also utilize ADESO technology, are leading residential SA products. POLYGLASS brings over 30 years of roofing and manufacturing technology to the industry, operating worldwide with headquarters in Italy. For more information visit the Web site.
	www.polyglass.com  180

Air Louvers, Inc.	
Fire-Rated Glazing	
	8 Doors & windows Air Louvers, Inc., a division of the Activar Construction Products Group, announces the addition of a wire-free, safety-rated, fire-rated glazing material. To meet the new glazing requirements of the IBC code, the KERALITE-FRF, SWISSFLAM, and PYROSWISS are rated to CATII impact rating and fire rated for use in fire doors up to 3-hr. and up to 1,500-sq.-in. in a 1-1/2-hr. fire-rated door. All three products are ideal choices for vision lites in fire doors, sidelites, and windows. For more information on the Air Louvers product line see the Web site.
	www.airlouvers.com AIA Booth #2425  183

Sto Corp.	
Air Barrier & Moisture Control	
	7 Thermal & moisture protection For a seamless, vapor-permeable moisture and air barrier on sheathing, choose Sto Guard®, a fluid-applied barrier for moisture control and mold prevention. Sto Guard is a breathable air barrier that provides superior protection against air and moisture intrusion in a variety of applications, including underneath brick, wood, vinyl, cement siding, and exterior insulation and finish systems (EIFS). Sto Guard: reduces the risk of condensation and mold caused by a leaking wall system; provides breathability for proper vapor diffusion and condensation control; and installs easily by paint, waterproof, or drywall contractors without special training.
	www.stocorp.com AIA Booth #1615  181

Doug Mockett & Co.	
Contemporary Door Handles	800-523-1269
	8 Doors & windows Sensous "S" curve stainless steel door pull is anchored by two oval brass supports. Overall it is 38-3/4-in.-high. HDL31 is just one of five initial door handle offerings from Doug Mockett & Company. These handles are imported from Confalonieri & C., one of Italy's most prominent designers and makers of contemporary furniture hardware and accessories. Mockett has just been named exclusive U.S. distributor for Confalonieri and is celebrating by issuing in June a new 275-page color catalog filled with many new designs of their office and computer furniture hardware, as well as a brand new section of hardware for kitchen, bath, and closet. Email info@mockett.com.
	AIA Booth #1131  184

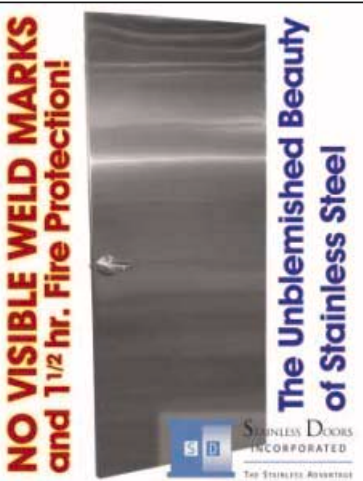
Trespa North America, Ltd.	
Facade Cladding Panels	
	7 Thermal & moisture protection Trespa Miteon is a unique exterior facade cladding system suitable for both new construction and re-cladding projects. Miteon exterior systems offer many ways to be expressive, either subtly or boldly. Trespa Miteon is available in a variety of standard solid colors, natural prints, and rich metallic hues as well as satin, gloss, and rock textures. Miteon panels are completely color fast, with patented UV-resistant technology. They resist acid rain, air pollution, and impacts and will not rust or delaminate. They require little upkeep, are easy to clean, and are made from renewable resources. Trespa is BEES listed, a member of the USGBC, and ISO 14001 certified. Trespa's Miteon panels protect your projects while expanding your possibilities.
	AIA Booth #3119  182

Eliason Corporation	
Double Action Doors	
	8 Doors & windows Easy Swing® Doors manufactured exclusively by Eliason Corporation. Model PMP-2 High impact traffic door reinforced throughout the impact area and back spline. Prevents cracking at hinge location and warping at swing edge. Strong, durable, and yet flexible enough to absorb the initial impact without the use of spring bumpers. Excellent for use in sales to stock room use. All doors are custom manufactured to your finished opening. Use of doors range from sales to stock room, walk-in coolers, delis, secondary freezer doors, restaurants, or just personnel doors. Easy to install and can be shipped directly to the job site.
	www.eliasoncorp.com AIA Booth #2353  185

Fimbel Architectural Door Specialties		
Custom Residential & Commercial Wood Doors		
	8 Doors & windows	Since 1924, the Fimbel family has been engineering and manufacturing custom residential and commercial wood doors for architectural and restoration projects. Its Roaring 20's and Early American Carriage House Doors re-create the look and detail of turn-of-the-century swing doors with all the modern ease and convenience of sectional door operation. Attention to detail and hand craftsmanship goes into every door the Fimbel family produces. Beyond its standard designs, customers can create architectural designs of their own, using various wood species, tru-divided windows, arch tops, and unique overlay designs. Technical support, including CAD drawing design and layout, is available. Use Fimbel's 80 years of experience to create your unique architectural statement.
		www.fimbelarchitecturaldoor.com  186

Nathan Allan Glass Studios, Inc.		
Cast Glass Flooring		604-277-8533
	8 Doors & windows	One of the most incredible new products in the construction industry for 2004 is Nathan Allan's exclusive cast glass with faux color finish floor panels. Produced in 3/8-in., 1/2-in., 5/8-in., and 3/4-in. thicknesses, these floor panels can be tempered to increase the strength of the glass ten fold, and are available in four combinations of multi faux finishes. For added safety, Nathan Allan has incorporated its Glass Sandpaper safety finish on the top surface to help create a non-skid environment. Glass Sandpaper enables the shoe tread to grip the glass without slipping. Panel sizes can be produced up to 6-ft.-6-in. by 11-ft.-6-in., in any shape possible.
		www.nathanallan.com AIA Booth #648  189

IGT Glass		
Anti-Reflective Glass		480-767-8220
	8 Doors & windows	LUXAR reduces glare and reflection by 99.5%, making every application where it is used so clear that the glass is almost invisible. When high visibility is desired Luxar is the product of choice. It is an ideal product for storefronts, such as Toys R US, pictured, museums, stadiums, view homes and restaurants, display cases, and projection rooms. Contact IGT Glass for more information.
		www.luxar.ch  187

Stainless Doors, Inc.		
Seamless Stainless Doors		888-438-8677
	8 Doors & windows	The stainless advantage: The engineers at Stainless Doors, Incorporated have developed a steel stiffened door from stainless steel, with internal double vertical hat channels and no visible marks on the door face skins, maintaining the aesthetics while building in durability. Features: (1) flush door standard; (2) 18, 16, 14, and 12-ga. steel available; (3) type 304, 316 optional; (4) finish #4 satin standard, optional finishes available; (5) vertical grain; (6) edge seam (lockseam) or optional seamless; (7) vertical double hat stiffeners; (8) fiber-glas between stiffeners; (9) inverted top and bottom channels; (10) hardware—standard door preparations. Fax number 888-438-8677. Email info@stainlessdoors.com.
		www.stainlessdoors.com  190

Jerome R. Durr Studio		
Custom Glass Art		800-552-9836
	8 Doors & windows	Jerome R. Durr Studio, providing residential, liturgical, commercial, and public art since 1973.
		www.jeromedurr.com AIA Booth #1793  188

Technical Glass Products		
Fire-Rated Doors & Frames		888-397-FIRE
	8 Doors & windows	Technical Glass Products offers Fireframes® Heat Barrier Series framing. The line of fire-rated doors and frames provides a dramatically different profile than traditional hollow metal steel doors and framing, as well as the ability to block heat transfer. Heat Barrier frames allow extremely large expanses of glass and are particularly well suited to commercial applications where aesthetics are important. Installation is easy and similar to a typical storefront system. The doors and frames are listed with UL for fire areas requiring ratings up to 2-hr. Heat Barrier framing is compatible with Pilkington Pyrostop™ and other glass fire wall products. Fax number 800-451-9857. Email sales@fireglass.com.
		www.fireglass.com AIA Booth #3139  191

VETROTECH Saint-Gobain

Fire-Rated Glass Solutions

888-803-9533



www.vetrotechUSA.com

8 Doors & windows

Backed by the depth and resources of more than 300 years of glass history and expertise, Vetrotech Saint-Gobain is able to offer the industry's broadest range of products based upon diverse technologies and manufacturing processes. Clear wire-free aesthetics that balance cost and performance against design and code requirements. For detailed information call or visit the Web site.

AIA Booth #1253

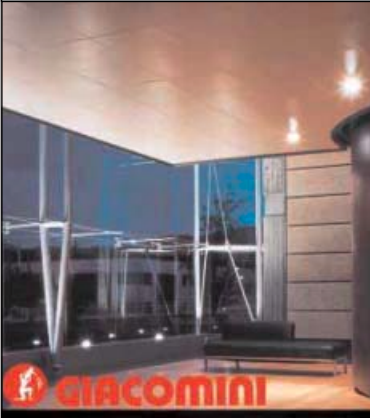


192

Giacomini

Radiant Ceiling Panels

310-821-7528



PLEASE CONTACT US AT 310 821 7528
or info.northamerica@giacomini.com

9 Finishes

Giacomini's new radiant heating and cooling ceiling panels give a new look to buildings' HVAC systems. The radiant ceilings can provide as much as 40% energy savings compared with standard VAV systems. They also provide space and construction savings, as well as a healthier and more comfortable building environment. They are engineered for new construction or retrofit of old buildings. The ceilings come in various custom designs. They are also available in standard 2-ft. by 2-ft. and 2-ft. by 4-ft. tiles compatible with a 15/16-in. grid system. They have been installed in hospitals, airports, office buildings, and clean rooms. Email info.northamerica@giacomini.com.

AIA Booth #2629



195

Weather Shield Windows & Doors

Wood Interior Windows & Doors



www.weathershield.com

8 Doors & windows

Engineered with unique features and built for unparalleled performance, the Weather Shield Legacy Series is simply one of the best window and door lines available for custom and luxury homes. Available in tilt double-hung, casement, awning, and direct-set windows and French doors, the premium windows feature elegant wood interiors in a variety of wood species from Weather Shield's Custom Wood Interiors Collection™.



193

Hakatai Enterprises, Inc.

Glass Mosaic Tile

888-667-2429



www.hakatai.com

9 Finishes

Hakatai Enterprises is an importer and distributor of glass mosaic tile with the experience and resources to handle any project regardless of size or type. Hakatai's glass tile is ideal for commercial, residential, interior, and exterior applications and found in hotels, restaurants, pools, spas, and homes around the country. Hakatai stocks five glass tile lines, 24 standard blends, and six standard gradients and has in-house, custom capabilities for gradients, blends, and murals. Quick and efficient turnaround time on orders. Immediate response to inquiries on stock levels, pricing, and freight quotes.



196

Zero International, Inc.

Edge Seals for Category B Fire Doors



www.zerointernational.com

8 Doors & windows

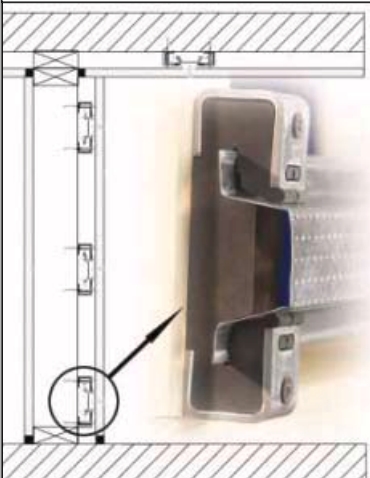
Zero International's #188S compression seal and #8144S gasket are UL-approved for use as Category G edge sealing systems and as Category H smoke and draft control gasketing for 20-min. Category B fire doors. These silicone systems are surface-applied with pressure-sensitive adhesive and eliminate the need for intumescence in the door assembly. Category G and Category H are testing-agency classifications used to standardize the testing and labeling of doors and gasketing under positive-pressure code requirements for fire-rating and smoke control, respectively.



194

Kinetics Noise Control

Sound Control Walls & Ceilings



www.kineticsnoise.com

9 Finishes

Isolated wall and ceiling systems are a highly effective method for solving noise or speech privacy problems. Resiliently mounted gypsum board or double wall assemblies are constructed to minimize sound transmission from one occupied space into another. Incorporating Kinetics Noise Control Model IsoMax, designers can create simple, easy to build walls and ceilings that do not require resilient channel, double-wall construction, and/or additional layers of gypsum board. Increasing the air cavity and resiliently decoupling the mass of the gypsum board from the non-isolated structure (e.g., joists, studs, masonry) effectively and economically controls noise transmission.



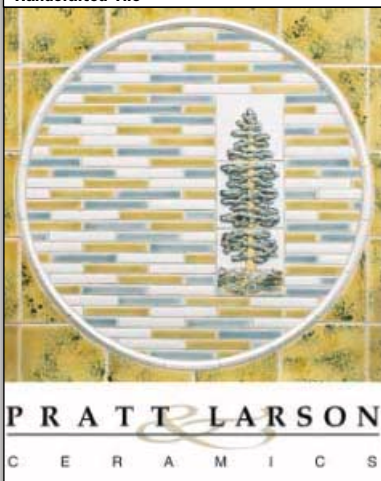
197

L.M. Scofield Company		
Concrete & Cementitious Flooring	800-800-9900	
	9 Finishes	
	Stylish Scofield flooring systems: For beauty and durability, concrete and cementitious toppings provide stylish flooring for high traffic areas in offices, lobbies, public spaces, food service, and retail areas. Scofield Systems offer diverse choices—ranging from monochromatic toppings to translucent, antique stains for faux finishes and dramatic graphics.	
www.scofield.com	AIA Booth #2031	198

B. J. Industries, Inc.		
Elevating Systems for Sinks	952-890-3870	
	10 Specialties	
	B. J. Industries, Inc. is your foremost supplier of elevating systems for sinks, serving the needs of long term care facilities, hospitals, hair salons, barrier-free housing units, private residences, and more. An Adjust-a-Sink System is an attractive solution to problems associated with standard height sinks. Visit the company's Web site.	
www.bjindustries.com	AIA Booth #1517	301

Nova Distinctive Floors		
Cork Floating Floors	866-576-2458	
	9 Finishes	
	Nova cork floating floors artistically embrace design, function, and environmental consciousness. Manufactured in 1-ft. by 3-ft. "click" (glueless) system planks that don't adhere to the sub-floor, Nova cork's 2004 line boasts 28 designer patterns, including Mesa (shown), that are sure to bring beauty and comfort to your home. Harvested from forests that meet stringent environmental, social, and economic standards, Nova cork, linoleum, and underlayment products have received the "Green Spec" distinction from Building Green, Inc., as well as FSC and SCS certifications and offer a 20-year residential warranty and 10-year commercial warranty. Fax number 310-830-9589. Email c.matthews@novafloorings.com.	
www.novafloorings.com	AIA Booth #1441	199

Cherry Tree Design		
Shoji Screens, Passage Doors & Lighting	800-634-3268	
	10 Specialties	
	Experience the artisan touch—sophisticated design, exceptional craftsmanship, natural warmth. Custom pocket doors, passage doors, room dividers, window coverings, closet doors—made in Shoji Style. Hardwood lighting and mirrors featuring contemporary, Arts & Crafts, and Asian styling. Hand-crafted in the U.S. using unsurpassed joinery, solid hardwoods, and beautiful durable facings. Perfect for commercial, hospitality, and residential projects. To learn more about Cherry Tree Design's complete product line, call its toll free number or visit its Web site. Fax number 406-582-8444. Email contact@cherrytreedesign.com.	
www.cherrytreedesign.com		302

Pratt & Larson Ceramics		
Handcrafted Tile		
	9 Finishes	
	Pratt & Larson Ceramics manufactures a versatile handcrafted tile line that includes design traditions from Arts & Crafts, Classical, and Contemporary styles. They are a leader in the industry, creating and producing 14 style design lines and four distinctive glaze lines, as well as several specialty glaze surfaces. Any tile can be ordered in any of the 300 standard glaze colors. Decorative tile may also be ordered hand-painted to accent the relief designs. With over 20 years of experience Pratt & Larson will make your tile as special as your home and your ideas.	
www.prattandlarson.com		300

Eclipse Lighting Inc.		
Custom Engraving		
	10 Specialties	
	Have your logo light up the sky. Business logos, directional symbols, and informational signage can be replicated with option <i>Gravura</i> in the Galileo Family for high visibility and attention-getting accent lighting in corporate headquarters, retail stores, restaurants, bars, clubs, theme parks, hotels, museums, theaters, campuses, airports, auto dealerships, healthcare facilities, and more. Match that with color-changing LEDs, recently added to the lamping options and you can take your lighting to new heights. Available in round, triangular, and rectangular shapes, Galileo Series sconces offer a wide variety of styles and sizes from 9-in. to 54-in. tall; artistically designed yet durably built.	
www.eclipselightinginc.com	AIA Booth #1391	303

FabriTec Structures		
Innovative Fabric Designs	10 Specialties	
	Shade Concepts is a design/build firm specializing in Tensioned Fabric Structures ranging from pre-engineered modular structures to custom-built designs. In an ever-changing technological era, high visibility and individualized identity play a part in positioning a company for exposure in a competitive environment. Shade Concepts can assist you by providing visual impact with dramatic architectural forms utilizing tensioned fabric membranes. A variety of fabrics with varying degrees of transparency allow for new architectural dynamics. Modern fabrics combined with high-performance support structure materials can be utilized for their specific properties such as UV resistance, low maintenance, non-combustibility, and illumination.	
	AIA Booth #826  304	

Penco Products		
Electronic Lockers	10 Specialties	
	Penco Products has introduced the SmartLocker™, an electronic locker that utilizes computerized identification technology to grant or restrict access. SmartLockers eliminate the need for conventional locks and keys. The system is designed to be adaptable to accept whatever means of personal identification is in use by an organization, such as employee or student ID cards or proximity devices. Penco can also provide dedicated locker access cards. Applications for SmartLockers include schools, health clubs, recreational facilities, retail establishments, police departments, and much more. Lockers are networked to a central computer in an administrative office, where usage can be monitored and access codes controlled.	
	www.pencoproducts.com AIA Booth #2493  307	

Gyford Productions		
Panel Hinge Clamp	10 Specialties	775-829-7272
 STAND OFF SYSTEMS™	The hinge clamp can be used to join StructureLite framed or unframed panels together. The panel clamps rotate within the hinge clamp to achieve any angle, from 180° out to parallel. The panel clamp attachments will accept panels of any material from 1/4-in. to 3/4-in. in thickness. The hinge clamp attached and adjusts with the turn of one screw. Gyford Productions, creator of the original Standoffs and StandOff Systems™, stocks over 250 components. Custom sizes, colors, and finishes available. Most stock items ship same day. Complete design and technical support available. Made in the U.S. Call for a free catalog.	
	www.standoffsystems.com AIA Booth #2391  305	

New Holland Church Furniture		
Curved Church Pews	12 Furnishings	800-220-1465
	Curved pews are "Round For A Reason"™ and are designed and manufactured by New Holland Church Furniture. Curved pews are designed for maximum seating, curved for efficient use of space, designed to enhance worship, created for community, uniting the family of God. New Holland Church Furniture is a certified member of the Architectural Woodwork Institute (AWI), so you can be assured of the very highest quality. Email nhcw@newhollandwood.com.	
	www.newhollandwood.com  308	

Hufcor, Inc.		
Movable Glass Partition Systems	10 Specialties	800-542-2371
	Hufcor introduces a complete new line of movable glass partition systems featured in a new brochure. The line features frameless storefront style panels with patent-pending batwing pass-doors, acoustic and weather resistant glasswalls without floor tracks, wood-clad products, and electrically controlled E-Trac tracking system and Loschwand overhead systems. Call or visit the Web site.	
	www.hufcor.com AIA Booth #2413  306	

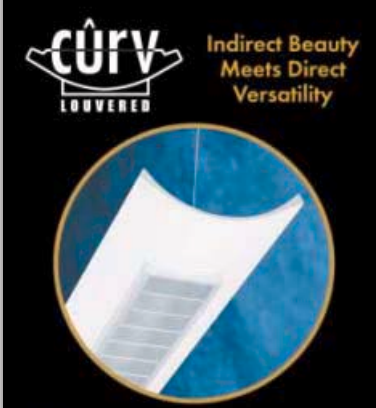
The Marshall Company		
Hardwood Pews	12 Furnishings	208-642-3344
	For over 75 years, The Marshall Company has offered distinctive church furnishings throughout the U.S. and Canada. A longtime leader in the church furniture business, Marshall prides itself on being one of the few companies in the U.S. to still manufacture only quality solid hardwood pews. That means no veneers, no chipboard cores, no plastic laminates, just the classic beauty and durability of solid Northern red oak. But materials aren't everything; Marshall's highly skilled craftsmen are dedicated to designing furniture that is beautiful and functional, as well as being affordable. Fax number 208-642-9537. Email pews@marshallpews.com.	
	www.marshallpews.com  309	

Finlandia Sauna Products, Inc.	
Precut Saunas	800-354-3342
	13 Special construction Finlandia Sauna has manufactured exclusive and authentic saunas since 1964. Finlandia offers precut sauna packages and modular sauna rooms as affordable luxuries that can be included in any remodel or new construction. The company markets four all-clear western softwoods and is the only manufacturer to use 1-in. by 4-in. paneling, instead of the cheaper 1/2-in. by 4-in. material used by others. Finlandia's packages include all room parts, a choice of a Finnish-made electric heater, a prehung door with choice of glass, and all necessary accessories. Finlandia's exciting new heater, the EverReady, is an excellent option for the person always on the go. Fax number 503-684-1120. Email info@finlandiasauna.com.
www.finlandiasauna.com	310

Architectural Area Lighting	
Lighting & Optical Systems	16 Electrical
	The new period style fixture from AAL combines optimal lighting performance with aesthetics in a traditional form. The Providence utilizes efficient lamp sources and electronic ballast options for longer lamp life and color correction. Optical systems include vertical and horizontal reflectors, as well as an indirect version for even, glare-free illumination. All optical systems earn IES cutoff classifications in compliance to Dark Sky ordinances. Other options include Quartz Restrike Lamps for HID sources in compliance to Egress Lighting codes, a Lightly Diffused Lens to conceal the fixture's interior and reduce the lamps brightness, and House Side Shields to cut off light shining onto adjacent properties.
www.aal.net	AIA Booth #223 313

G Squared Art	
Architectural Ceiling Fans & Lighting	877-858-5333
	15 Mechanical Balanced design that pleases the eye, creates a mood, a gentle breeze. Moving sculpture. The San Francisco ceiling fan—a GOOD DESIGN Award winner. Whisper quiet, powerful, and beautifully made, this timeless design is available with or without a light. Versatile—can be used on 8-ft. ceilings with optional 6-in. downrod or on cathedral ceilings with downrods up to 6-ft.-long. Suitable for sloped ceilings of up to 29°. Lifetime warranty. To buy high-design architectural fans and lighting, please visit G Squared's Web site or call between 6 A.M. and 6 P.M. PST.
www.g2art.com	311

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Profile



Sound and space interface in Christopher Janney's unique world

Interviewed by Jane F. Kolleeny

Christopher Janney's work represents a fusion of his two passions—music and architecture. Three years after graduating in 1973 from Princeton University, where he majored in architecture and sculpture, he entered a master's program for artists at MIT, providing him free reign to experiment with technology. Janney developed a unique form of environmental and participatory architecture, an immersive art form that relies on sound to transform space. When the New Sound, New York program of performance, dialogue, and sound installations was launched in New York City this spring, Janney, curator and a visiting professor at Cooper Union, spoke to RECORD.

Q: *What inspired you to think that music and architecture could be partners in art?* All music is fundamentally made of rhythm, harmony, and melody. With many of my installations, such as *Harmonic Runway*, an interactive environment of light, sound, and color in the Miami International Airport, I control the harmonic and melodic aspects, but the rhythm is given over to the movement through the particular architectural space. As people move through the 180-foot-long concourse, they trigger photo sensors stationed every 10 feet, which send information to computers that shape the rhythm of the music piped into the space. I want people to experience my pieces, not just see them.

Much of your work exists in urban areas. Why? I feel that cities need humanizing. For example, large urban plazas are often designed to respond to adjacent buildings, but rarely consider the pedestrian. In an effort to bring intimacy and human scale back to the plaza, I designed something called *Sonic Forest*, part of a series of urban musical instruments, a theme that characterizes many of my pieces. It is a series of columns placed on an open plaza to create scale. Sensors, lights, and speakers within each column respond to the passersby.

Has the architecture profession embraced your work? I think architecture embraces my work, but not necessarily the profession; painting the space with sound is not something that falls under the normal purview of architecture. A number of factors in the past 10 years have helped to change that, such as the One Percent for Art Program, where public construction budgets dedicate a percent to art. In private development, however, art is usually the first thing to go. In the end, it comes down to relationships; you resonate with those that understand and appreciate what you do, and they hire you.

Do you find that you use your architectural training in creating art? I am so happy to be trained as an architect! In architecture school, I learned how to convey abstract concepts to a variety of audiences, an invaluable skill in life. Also, sketching and learning CAD have been

extremely useful tools. Since my interest is in making music physical, I get information from the concrete world that helps me create; to me, that sensitivity in large part results from being an architect. Someone asked Frank Gehry what he believed an architecture student needed to do to perform architecture, and he said, "read novels," and I totally agree with him. Architecture is a frame of mind, it's about ideas; the profession is about how to translate those ideas into the real world. Recognizing these two distinct aspects and finding how to bring them together is what it's all about.

Photography by Andrew French

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